DOCUMENT RESUME

ED 078 173 VT 020 341

TITLE	Procedural Manual for Task Analysis and Curriculum Guide Development. Development of Occupational Therapy Job Decriptions and Curricula Through Task Analysis. Report Number Three.
INSTITUTION	Ohio State Univ., Columbus. School of Allied Medical Professions.
SPONS AGENCY	Public Health Service (DHEW), Washington, D.C.
PUB DATE	72
NOTE	230p.
AVAILABLE FROM	Occupational Therapy Division, School of Allied Medical Professions, College of Medicine, Ohio State University, 1583 Perry St., Columbus, OH 43210 ($6.00 for set)
EDRS PRICE	MF-$0.65 HC-$9.87
DESCRIPTORS	*Curriculum Development; *Guidelines; Health Occupations Education; Job Analysis; *Manuals; Material Development; Occupational Therapy; Reference Materials; *Task Analysis; Task Performance

ABSTRACT

Resulting from a project in which a curriculum for an occupational therapy program was developed through task analysis, this manual contains guidelines for developing curriculum guides using job analysis data. The development process consists of 13 procedures which are organized into these four categories: (1) Organization of a project staff, (2) Development of job analysis procedures and the collection and synthesis of job analysis data, (3) Organization of work activities into new job descriptions, and (4) Development of curriculum guides. Each procedure consists of a title, discussion of the strengths and weaknesses of part or all of the procedure, and step-by-step explanations to accomplish the procedures, which are accompanied by descriptions of the actual project experiences that served as bases for the steps. Several materials generated during the project are appended. Related publications are available as VT 020 388-VT 020 340 in this issue. (SB)

ED 078173

VT020341

DEVELOPMENT OF OCCUPATIONAL THERAPY JOB DESCRIPTIONS AND CURRICULA THROUGH TASK ANALYSIS

REPORT NUMBER THREE

PROCEDURAL MANUAL FOR TASK ANALYSIS AND CURRICULUM GUIDE DEVELOPMENT

SCHOOL OF ALLIED MEDICAL PROFESSIONS
College of Medicine
The Ohio State University
Columbus, Ohio 43210

Grant No. 5 D02 AH 00964 01, 2

U.S. Department of Health, Education and Welfare
Public Health Service

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Report Number Three
Department of Health, Education and Welfare
Grant #5 D02 AH 00964 01, 2
conducted under the direction of
Kathryn T. Schoen, Ph. D.

"Development of Occupational Therapy Job Descriptions and Curricula Through Task Analysis"

PROCEDURAL MANUAL FOR TASK ANALYSIS AND CURRICULUM GUIDE DEVELOPMENT

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July 1, 1970 to June 30, 1972

The work presented or reported herein was performed pursuant to a grant from the U.S. Department of Health, Education and Welfare, Public Health Service. In addition, an adaptation of the U.S. Department of Labor job analysis procedure was used in this project. However, the statements expressed herein do not necessarily reflect the position or policy of these agencies, and no official endorsement by them should be inferred.

TABLE OF CONTENTS

Introduction Page i

PROCEDURES

1. Selection and Organization of Project Staff 1
2. Development or Adaptation of Task Analysis Data Collection Procedures 5
3. Selection of Facilities in Which Task Analysis Data are to be Collected 9
4. Selection and Training of Data Collection Personnel 13
5. Data Collection 17
6. Development of a Composite List from Individual Task Analysis Reports 21
7. Evaluation and Revision of the Composite List 27
8. Preparation for Conference to Develop Job Descriptions from Composite List 31
9. Development of Job Descriptions from a Composite List of Activities 35
10. Final Editing and Evaluation of Job Descriptions 43
11. Preparation for Development of Curriculum Guides 47
12. Development of Curriculum Guides 51
13. Evaluation of Curriculum Guides 69

TABLE OF CONTENTS
(Continued)

APPENDICES

1. Organization of Project Staff Page 73

2. Occupational Analysis Handbook 79

3A. Criteria for Selecting Occupational Therapy Facilities 137

3B. Selected Occupational Therapy Facilities and Significant Characteristics of Each 141

4. Format - Scheduling Confirmation Letter 145

5. Format - Letter Requesting Facility Suggested Dates for Occupational Analysis 149

6. Evaluation of Occupational Therapy Analysis Data 157

7. Cover Letter and Sample Page from Composite List Rating Form 165

8. Sample Duty Worksheet Used in Job Description Development Conference 173

9. Survey Results - Questionnaire to Occupational Therapy Employers 177

10. Survey Results - Questionnaire to Related Health Professions 193

11. Bibliography 199

12. Sample Module and Suggestions for Combining Modules 205

13. Developing Selection Specifications for Occupational Therapy 209

14. Survey Results - Levels of Complexity of Learning 227

15. Curriculum Guide Evaluation Forms 235

16. Occupational Therapy Curriculum Evaluation 245

17. MINUTES - Planning Advisory Committee Meeting 251

INTRODUCTION

This report was written to provide guidelines for the development of curriculum guides using job analysis data. It consists of thirteen procedures which can be organized into four categories:

Procedure 1 - Organization of a project staff.

Procedures 2-7 - Development of job analysis procedures and the collection and synthesis of job analysis data.

Procedures 8-10 - Organization of work activities into new job descriptions.

Procedures 11-13 - Development of curriculum guides.

Each procedure consists of three parts: A title, a step-by-step methodology, and a discussion. The methodology is divided into two columns. The left column, headed Method, provides generalized statements of procedural steps. The right column, headed Illustrations, consists of descriptions of the actual experiences that served as bases for these steps. The discussion consists of comments about strengths and weaknesses of part or all of the procedure.

In addition to the thirteen procedures, seventeen appendices have been included. They contain materials generated in the study used as a basis for this report.

The staff would like to express their sincere appreciation to all those persons who have contributed their time and expertise to the development of these procedures:

Mary F. Heermans, Occupational Therapist, Registered, of the University of Texas, Medical Branch, provided significant assistance in planning and organizing this project. William Ternet of The Ohio State University played a key role in initial project organization.

Leon Lewis and Adeline Padgett of the United States Training and Employment Service, United States Department of Labor, furnished invaluable help in the development of the job analysis procedures, the collection of the job analysis data, and the organization of the new job descriptions.

The Ohio Bureau of Employment Services donated the services of Otis Cooper and Paul Mazuzan, Occupational Analysis and Industrial Services. They played an important role in the development of the job analysis procedures, in the collection and synthesis of the data, and the preparation of the new job descriptions.

Nedra Gilette, Occupational Therapist, Registered, of Columbia University, H. Kay Grant, Occupational Therapist, Registered, of The Ohio State University, and Helen Hopkins, Occupational Therapist, Registered, of Temple University provided valuable input during the process of curriculum guide development.

PROCEDURE I

Selection and Organization of Project Staff

Method	Illustration
1. Define project objectives in terms of staff responsibilities. Establish staffing pattern.	1. In this project, all activities could be grouped quite conveniently under three headings: Planning, Development of Job Descriptions, and Development of Curriculum Guides. At the time the project was being conceptualized, it was felt that it would be extremely difficult finding one person having the particular background needed to function as a competent director for the activities in the latter two groupings. Hence, there emerged the idea of having both a Director and a Co-Director. Each would assume primary responsibility for one. This division of responsibility suggested that these two positions be filled on a part-time basis. Doing so necessitates having someone who can provide continuous management of the project throughout its duration, however. Thus, the demand for a Project Administrator was established. Both the nature and volume of activities involved in the evaluation of data and the development of curriculum guides indicated a need for a Curriculum and Evaluation Specialist to assist in the completion of these functions. In anticipation of the volume of typing, form and report production, preparation for conferences, etc., two positions -- Administrative Assistant and Clerk-Typist -- were created.

Method	Illustration
	It was planned that Occupational Therapist - Occupational Analyst teams would be utilized to collect the data for the job descriptions. These individuals were classified as Project Consultants rather than staff because of the relatively short duration of this activity. Again, in the last phase, i.e., development of the curriculum guides, it was planned that an educator-practitioner team would be retained, in a consultant capacity, to assist in the development and preparation of each guide.
2. Establish project staff organization.	2. In the Occupational Therapy study, the organization for project staff was planned to be as shown in Appendix I, Figure A, page 75.
3. Recruit project staff.	3. The Director and the Co-Director had training and experience in curriculum development and in task analysis, respectively. The Project Administrator was a registered Occupational Therapist. In the selection of an Evaluation and Curriculum Specialist, the project deviated from original plans. A great deal of difficulty was experienced in finding one person who was knowledgeable in both areas. Hence this position was filled with two one-half time Graduate Research Associates. The organization chart for the project staff was actually as shown in Appendix I, Figure B, page 76.

DISCUSSION

The specific way in which this study was staffed proved to be quite advantageous. In particular, the registered Occupational Therapist who served as Project Administrator was an invaluable asset. Her knowledge of the profession continuously provided insights that might overwise have been overlooked. Thus, she served an important role in all aspects of this study. In view of this experience, it is strongly recommended that a number of the profession or occupation being studied serve in a similar capacity in any study of this type undertaken in the future.

In general, overall personnel needs are determined by the nature of the project; they cannot be changed unless the characteristics of the project itself are modified. The particular staffing pattern can, however, be designed to fit the qualifications of available project staff. As a consequence, it would seem appropriate to hypothesize that no universal staffing pattern can be established; on the contrary, it is highly likely that each project like this will have its own unique organization.

PROCEDURE 2

Development or Adaptation of Task Analysis Data Collection Procedures

Method	Illustration
1. Define scope of data to be collected.	1. In the Occupational Therapy study, the objective was to obtain a description of all activities currently performed within the domain of Occupational Therapy.
2. Select or adapt basic task analysis data collection procedures by:	2. After reviewing several task analysis systems, the basic procedure developed and used by the U.S. Department of Labor was selected. It was chosen:
a. Reviewing procedures that have been used in similar studies.	a. Because its potential usefulness had been well demonstrated through prior application in the analysis of a wide variety of occupations.
b. Identifying types of data each procedure will yield.	b. Because it includes techniques for evaluating worker traits involved in the performance of tasks.
c. Determining whether procedures must be modified or augmented.	c. Because it could be used with a minimum amount of modification.
d. Defining numbers and training of data collection personnel needed in each.	d. Because there are, nationally, a large number of persons trained in the use of these procedures. It was anticipated they would be able to provide valuable assistance by serving as resource persons, trainers, or data collectors.
3. Modify or expand basic procedures as necessary to obtain additional data. This might include:	3. See Appendix 2:

Method	Illustration
a. Comprehensive descriptions of the facilities from which task analyses are obtained.	a. Pages 82 -86, Form A - OCCUPATIONAL THERAPY DEPARTMENT DESCRIPTION.
b. Supplemental types of information which provide a more comprehensive description of qualitative and/or quantitative aspects of tasks being performed.	b. Pages 87-90, Form B - OCCUPATIONAL THERAPY TASK ANALYSIS.
c. Descriptions of minimum education and/or experience standards established as entry qualifications for the performance of activities.	c. Pages 91-94, Form C - OCCUPATIONAL THERAPY DUTY QUESTIONNAIRE
d. Identification of activities being performed independently or simultaneously by persons in two or more disciplines. A description of problems or advantages, if any, resulting from this overlap.	d. Pages 95-98, Form D - OCCUPATIONAL THERAPY TASK ANALYSIS REVIEW.
4. Test procedures by means of trial runs. Modify procedures as necessary to facilitate data collection.	4. The task analysis procedures were documented in rough draft form. Experienced job analysts and an Occupational Therapist then used these procedures to collect task analysis data from local health care facilities. They suggested alterations to procedures or forms that would make data collection easier, more accurate, or more complete.
5. Prepare reference handbook.	5. A handbook with detailed instructions for all aspects of the task analysis data collection was prepared. It was used both as a training manual and as a reference handbook. This entire handbook has been included as Appendix 2, page 79.

DISCUSSION

The basic task analysis procedures developed for and used in this study were generally adequate. There was, however, the standard problem of being unable to define terms so as to get complete agreement concerning their meanings (confusion over the terms "duty" and "task" was an example).

Other possible shortcomings of these procedures that appeared during the collection or analysis of the data were:

1. The "people involvement" aspect of worker activities seems to have been underrated. This may have occurred because the cognitive or skill parts of worker performance are more easily seen. In any event, the procedures should be modified to insure that inter-personal aspects of activities are observed and recorded.

2. The obtained data provided inadequate criteria for defining minimum quality or quantity of performance. Undoubtedly, however, this is a problem that is difficult to overcome in any job or task analysis. Lack of this kind of information places serious handicaps on subsequent efforts to design curricula and student evaluation techniques. It has been suggested that critical incident or job inventory techniques might be used to provide these kinds of data. When such an analysis is to be used for developing curricula and evaluation procedures, this aspect of the data collection must be given consideration by curriculum and evaluation specialists.

3. The task analysis teams indicated that they had considerable difficulty in completing Form C - OCCUPATIONAL THERAPY DUTY QUESTIONNAIRE, particularly in response to those questions about how the duty was learned, how much time is required to perform it, and how frequently it is performed. In general, it appeared that answers to these questions required more time than was allocated to the teams (two days per analysis).

It is strongly recommended that developed procedures be subjected to some kind of test or "dry run" before they are used to collect study data (see Step 4 above). Despite the fact that the final procedures were far from perfect, several major problems came to light and were corrected in this way.

When two or more data collection forms are to be used, color coding of both the forms and the related instructions can be extremely helpful. This will be especially evident if analyses from several facilities are to be combined to obtain one final composite description or set of descriptions.

PROCEDURE 3

Selection of Facilities in which Task Analysis Data are to be Collected

Method	Illustration
1. Define tentative criteria for selecting facilities. Included might be factors such as:	1. There were three primary, tentative criteria used in the Occupational Therapy project. They were: patient age, type of patient disability, and type of facility. The rationale underlying the selection of these was explained in the project proposal. This explanation has been included as Appendix 3A, page 137.
a. Geographic location of facilities, if work is performed differently in different locations.	
b. Type of administrative or staffing organization, if different types of organizational structure produce differences in the activities of the occupation being investigated.	
c. Differences among facilities' functions or objectives.	
d. Variation in minimum education and experience qualifications used in screening or hiring of personnel. This could have a bearing not only on the level of activities being performed, but also on the amount of employee training taking place.	
3. Cost considerations. The number and location of facilities may be determined, at least in part, by consideration of costs involved in having task analysts (or analysis teams) travel to selected facilities.	
2. Establish final criteria for selecting facilities	2. In this study, a project advisory committee reviewed the tentative selection criteria and suggested the following final criteria:

Method

Illustration

a. To select facilities with Occupational Therapy departments in which at least one of the following areas of practice could be observed:

   (1) Psychosocial Function

      - Acute/Restorative
      - Prevention
      - Maintenance

   (2) Physical Function

      - Acute/Restorative
      - Prevention
      - Maintenance

b. To select facilities with Occupational Therapy departments in which as many as possible of the following secondary criteria could be met:

   (1) Private, public, state, and federal administration or funding.
   (2) In-service training programs.
   (3) Consultative responsibilities.
   (4) All ages of client/patient population.
   (5) All geographic areas within the United States.
   (6) All sizes of Occupational Therapy Departments.

c. To select facilities that would be within reasonable commuting distance for analysis teams.

Method	Illustration
	d. To conduct analyses in 15 facilities. Originally, it was planned that 27 facilities would be utilized; however, the project advisory committee felt that 15 should be adequate to describe the domain of Occupational Therapy.
3. Develop a tentative listing of facilities which might be used as sources for task analysis data.	3. The Project Administrator, in consultation with other Occupational Therapists, developed a tentative listing of facilities. Each facility met one of the primary and at least one of the secondary criteria.
4. Establish a final, confirmed list of facilities.	4. This goal was accomplished in three steps: a. Occupational Therapists on the project advisory committee suggested additions to or deletions from the project list. Each new facility met at least two of the criteria necessary for inclusion in this list. Selected facilities and the criteria each met are shown in Appendix 3B, page 141. b. The Project Administrator talked, by telephone, with the director or supervisor of each selected facility. This telephone call served three purposes: (1) The facility representative was given a brief explanation of the project. (2) Facility participation was requested. (3) Assurance was given that a formal, written request would be sent to the facility. c. Written confirmations were sent to all facilities that had given tentative verbal agreement to participate. The format of this confirmation is as shown in Appendix 4, page 145.

DISCUSSION

The specific steps in this procedure depend greatly upon the manner in which a project is staffed. In particular, the availability of professional personnel who know and can select facilities is a major consideration

In this study, the task analysis data were to provide a picture of all activities being performed within the domain of Occupational Therapy. The above procedures seemed well suited to this purpose. If, however, the task analysis data are to fulfill a different role, then the criteria for selecting facilities may have to be changed. For example, proper geographic representation might be irrelevant if the data are to describe current innovations, i.e., arrangements should be made to visit those facilities in which innovations are taking place regardless of where they are located.

Communications involving facility participation require time, particularly in the case of publicly administered facilities, e.g., Veterans Administration, armed services, or state centers. Probably a month should be allocated to receipt of a letter indicating willingness to participate. This will allow adequate time for the request to process through all the proper channels within the facility.

In this study, some facility representatives expressed apprehension concerning the task analysis. These negative feelings centered upon both the amount of facility staff time that would be needed and the publication of analysis findings. Despite their trepidation, all facility representatives except one agreed to participate. To increase the likelihood of this kind of outcome, facilities should be given an adequate description of their involvement in the project and enough time to make a decision regarding whether or not they will participate. It is most helpful to emphasize that information for a specific facility will not be published.

PROCEDURE 4

Selection and Training of Data Collection Personnel

Method	Illustration
1. Select data collection personnel using criteria which define needs. Consideration might be given to the following: a. Are data to be collected by an individual or by a team? b. Is a knowledge of task analysis or the occupation required? c. Do the numbers and locations of facilities to be visited suggest an optimum number of analysts that will be needed? d. Is availability of data collection personnel a problem?	1. Since the Occupational Therapy study was to use an adaptation of Department of Labor task analysis procedures, an effort was made to secure the services of experienced analysts. Both federal and state employment agencies indicated a willingness to participate. It was planned that two member teams rather than individuals would be involved in the data collection. One member was an experienced analyst who (a) had knowledge of task analysis procedures, (b) was familiar with assignment of numerical ratings to task performance, and (c) could view the occupation with objectivity. The second member of the team was an Occupational Therapist who would utilize knowledge of the profession to insure completeness of the task analysis data. The 15 facilities selected for this project were located in the six states of California, Florida, New York, Ohio, Washington, and Wisconsin. Thus, to minimize travel expenses, six teams were selected.
2. Prepare for a training conference. Three major considerations are: a. Facilities (1) Lodging (2) Meals (3) Transportation (4) Conference Room	2. For the Occupational Therapy project, this conference was held at the project center. Since all but one team came from another state, arrangements were made for both lodging and conference accommodations at one centralized location.

Method	Illustration
b. Materials (1) Training manuals (2) Audio-visual aids (3) Paper, pencils, name tags, etc. for conferees	In terms of materials, one Occupational Analysis Handbook, a kit of data collection supplies, pencils, paper, name tags, etc., were assembled for each team. Visual aids, as such, were not prepared; a chalkboard in the conference room was used whenever illustrations were needed.
c. Presentation (1) Formal lectures and demonstrations (2) Discussions (3) Practice or "dry-run" experiences	To prepare for the presentation itself, the project staff met several times to develop an outline for the conference topics and to rehearse "lecture" materials. In addition, arrangements were completed for all teams to visit selected local health care facilities. These visits were scheduled so that each team could acquire experience in using the data collection forms and procedures. Time was allowed for discussion and possible "last minute" revisions that might improve the planned procedures for data collection.
3. Conduct the training conference. A suggested format might include:	3. The training conference for the Occupational Therapy study followed the six steps outlined on the left. A total of three days was scheduled for this session.
a. Review of project background and goals.	
b. Broad description of the occupation to be analyzed. (This may be especially helpful if the task analysts are unfamiliar with this profession.)	The first one-half day was allocated to a review of the project and a description of the occupation and task analysis procedures (steps a, b, and c).
c. Broad description of the "why and how" of task analysis. (Again, this will help if the data are to be collected by a team, one member of which has had little or no experience with this technique.)	Approximately one and three-fourths days were needed to describe the data collection forms and procedures for completing them, to conduct a practice session, and to review and discuss the forms and procedures (steps d and e).

Method	Illustration
d. Description of data collection forms and the procedures for their completion. Explanation of the rationale underlying the development and use of each form might tend to eliminate the need for questions from conferees.	The remaining time was spent explaining procedures for communicating with the project center, scheduling visits to facilities, submitting data, reimbursement for expenses, etc. (step f).
e. Data collection practice sessions followed by a discussion period. This should help to clarify procedures and allow for the resolution of problems if any are encountered.	To minimize participant fatigue which might occur in a three-day conference, each member of the project staff developed and conducted small segments of the total presentation. Every effort was made to assign each staff member the topic or topics with which he was most concerned.
f. Review of procedures for completing associated functions, e.g., preparing and submitting forms for travel and other expenses, submitting completed task analysis forms, or communicating with the project center.	

DISCUSSION

The selection of data collection team members was greatly facilitated by both Department of Labor and American Occupational Therapy Association representatives. Each organization provided names of persons, agencies, or facilities to contact for recruitment of these potential team members.

Each team member proved to be a valuable asset to the project; however, certain strengths and weaknesses of the team concept manifested themselves. These will be discussed under the next procedure, Data Collection.

In this study, the training conference was keyed to the orientation of teams rather than individuals. In retrospect, it seems that the conference schedule was somewhat over-ambitious; too much was planned for these three days. There was not enough time for the complete resolution of some unanticipated questions regarding definitions and procedures. Generally, however, conferee interest was developed and maintained and the overall goals were accomplished.

PROCEDURE 5

Data Collection

Method	Illustration
1. Arrange for task analysis personnel to visit facilities selected for study. a. Preliminary time schedule for visit can be established, in writing, by project staff. b. Final, specific schedule can (and possibly must) be arranged by task analysis personnel.	1. In the Occupational Therapy study, each letter confirming the facilities agreement to participate included suggested dates for the analyses (see Appendix 4, page 145). Accompanying this letter was a form to be used by facility representatives to advise analysis teams of possible dates for the analysis (see Appendix 5, page 149). Upon receipt of this form, an analysis team member contacted the facility to establish a firm date for the task analysis (see page 99, Appendix 2).
2. Conduct task analyses at selected facilities. In general, each task analysis can be subdivided into four major steps:	2. The task analyses conducted for the Occupational Therapy study more or less followed the four steps detailed at the left. This sequence was suggested both by the project procedures (see Procedure 2) and those developed by the Department of Labor (from which project procedures were developed).
a. Description of the facility and selected characteristics of the department or position being analyzed.	a. Information pertaining to the facility and characteristics of the department (Form A - pages 82-86, Appendix 2) was obtained by the analysis team through an interview with the head of the Occupational Therapy Department. Logically, this is an essential first step since knowledge of the department's staffing pattern is vital to subsequent collection of complete and accurate data.
b. Description of all tasks involved in the department or position being observed.	b. Both team members participated in the collection of the task analysis data. The Occupational Analyst assumed responsibility

Method	Illustration
	for writing all of the activity statements. The Occupational Therapist observed on-going operations, equipment, supplies, etc., to determine whether there were additional activities, not being performed at that time, that should be included in the analysis.
c. Evaluations, if any, of worker traits needed for performance of tasks in each position or cluster of tasks.	c. Numerical ratings of worker functions (assigned to each activity or task) and worker traits (assigned to each cluster of tasks or duty) were made by the Occupational Analyst.
d. Review, by facility representative, of complete task analysis.	d. In the Occupational Therapy study, two additional forms were completed by the analysis teams. The first (Form C - pages 91-94, Appendix 2) was completed for each duty (cluster of tasks). In general, the Occupational Therapist obtained this information during or immediately after the time the Occupational Analyst listed all the activities or tasks. The other form (Form D - pages 95-98, Appendix 2) was designed for use after the task analysis was completed and typed. Either or both members of the analysis team could obtain these data. Arrangements were made to pay for typing services at the location of the task analyses. Thus, each team could have a typed document available for the final review. This review of the complete task analysis was done by the Occupational Therapy Department Head. After the review (with changes, if any) the

Method	Illustration
	Department Head signed the analysis. This provided verification that the document was both complete and accurate. The procedure for reimbursement of typing expenses is shown on pages 101-102 in Appendix 2.
3. Submit completed task analysis to project center.	3. The typed analyses were to be submitted to the project center as specified on page 103 of Appendix 2.
4. Arrange for reimbursement of travel and other expenses.	4. In the Occupational Therapy study, both the analysis teams and the facilities they visited were located throughout the United States. It was necessary, therefore, to establish a rather formal and elaborate procedure for reimbursing team members for their expenses. A detailed outline of this procedure is shown on pages 104-106 of Appendix 2.

DISCUSSION

Except for the fact that not enough time was allocated to facility representatives for their decision regarding participation in this study, the scheduling procedure itself was effective. Two major problems did occur, however:

1. There was not enough time allowed for each analysis. In general, it was planned that each one be completed in a maximum of three days. This simply was not adequate for all the information to be collected. Fortunately, the Occupational Therapist team member was able to "speed-up" the process by directing the Occupational Analyst's efforts. Most of the Occupational Analysts agreed that having someone who knows the position(s) being analyzed can facilitate the process, but they agreed that this was not an ideal substitute for more time. Hence, it is recommended that the time for an analysis be planned on the generous side (three or four days for each position being analyzed might be more realistic for a job of comparable complexity).

2. The timing for the entire data collection process was poor. The scheduling of the various steps in the project was such that these analyses were to be conducted in the period extending from mid-November to the end of December. In addition, the analysis teams were urged to complete their visits by mid-December since the activities in Occupational Therapy between mid-December and mid-January are likely to be atypical with respect to what goes on the rest of the year (e.g., where possible, patients will spend the holidays with their families or Occupational Therapy staff and patients may play a major role in Christmas activities). Unfortunately, a delayed starting date for the project and the tight scheduling of the steps required for its completion did not allow much latitude. It is strongly recommended that careful attention be given to setting up task analysis schedules to insure that problems similar to this are not encountered.

Procedures for the reimbursement of expenses depend so much on the nature of the project that little of a general nature can be said about them. The method used in the Occupational Therapy study proved to be quite satisfactory.

In any subsequent study, fewer analysts (or analysis teams) will be used. Natural differences in Occupational Analysts' writing styles, perceptions concerning what constitutes different levels of activity, and organization of materials produced variability that somewhat increased the difficulties in analyzing and restructuring the data.

PROCEDURE 6

Development of a Composite List from Individual Task Analysis Reports

Method	Illustration
1. Devise a coding system so that:	1. In the Occupational Therapy study, the coding was done as follows:
a. Any activity can be traced back to the document from which it was obtained.	Duties were coded by showing facility, team. and page numbers (see Appendix 2, page 89.) Tasks were coded by showing facility, team, page, and task numbers (see Appendix 2, pages 88 and 89).
b. The coding reflects homogeneous or sequential groups.	b. As the composite list was formed, each duty was coded to show the functional area under which it fell (see Appendix 2, pages 87 and 89) and its rank under that function (as determined by its position in the sequential or logical series). For example, the code 0316 would indicate the 16th duty under the third function. Tasks were assigned two additional digits to indicate task position in a duty, e.g., 031605 would indicate the fifth task in the 16th duty under the third function.
2. Place individual activity statements into a format that will allow them to be sorted.	2. After a preliminary survey of the Occupational Therapy data, it was decided that the reorganization of statements into a composite list would be done on the basis of verbal content rather than any numerical indices (see DISCUSSION below). Each task analysis was duplicated and the copy was cut apart so that individual duty and task statements could be glued to 5" x 7" cards. At the time these cards were prepared, they were coded so that it would be possible to trace each statement to the document from which it was obtained (see 1a. above).

Method	Illustration
3. Sort duties and tasks from each task analysis into a single set of functional groupings.	3. As individual duty and task cards were prepared from each task analysis:
a. Group tasks with their appropriate duty under each analysis.	a. Cards containing task statements were grouped with the cards containing duty statements to which the task statements applied.
b. Place duty-task packets in the appropriate functional group.	b. The groupings emerging from step 3a. above were placed in piles labeled with appropriate functional group headings.
c. Code task and duty cards to indicate the functional groups to which they were assigned.	c. All groups were reviewed to insure that duties and their associated tasks were correctly placed. Then each duty and task card was coded with the number of the function to which it was assigned.
4. Organize duties within each functional group:	4. Most functional groupings were made up of duties from two or more analyses. To further organize the data, same or similar duties (and their associated tasks) were placed in one subgroup under a function.
a. Collect together like or similar duties.	
b. Sort duties into a sequential or logical order.	Some functional groups were part of a larger process, e.g., client screening and evaluation was seen as the second sequential step in the overall process of patient/client service. The duties in each of these sequential groups were placed in order. Following this the groups themselves were sequenced.
c. Assign a tentative identifying numerical code to each group of duties.	Tentative four-digit codes were assigned to these duties to show function and duty number.

Method	Illustration
5. For each duty: a. Sort tasks into homogeneous groups. b. Write or select a task statement that adequately covers the entire group. c. Place task statements in sequential or logical order. d. Assign an identifying numerical code to each final task group.	5. During the synthesis and sorting of duties, the cards for tasks associated with each duty were kept with that duty. This considerably facilitated sorting tasks into homogeneous groups. Essentially, the sorting was based on similarities of meanings, i.e., two or more statements that may have been worded differently, but referred to the same worker activity were considered as equivalent or similar tasks. After similar tasks were combined, a single statement was selected or written for each group. Here the goal was to find a concise statement that provided a complete description of the activity. If one of the existing statements served this purpose, it was used; if not, one was written. When the tasks were completed for a duty, they were arranged in a sequential or logical order. An identifying six digit code was assigned to each of the summary task statements.
6. Review duty statements and select or write statements to be used as summaries.	6. After the tasks for each duty had been grouped and adequate summary statements written or selected for each, the associated duty statements were reviewed. This review was for the purpose of determining whether or not an existing duty statement adequately covered the activities in the tasks attached to that duty. If one of the statements was adequate, it was used; if not, a new statement was written.
7. Recalculate numerical indices of job or worker characteristics (if quantitative evaluations were used).	7. In this study, numerical indices were used with tasks and duties. For data that fell into a continuum, a median, mean, and standard deviation

Method	Illustration
	for the combined data were computed. If the median fell within ±1 S.D., the mean (rounded to the nearest whole number) was used as a numerical index. If the median fell outside this ±1 S.D. range, (mean+median)/2 was to be used to calculate the index. This situation never occurred; therefore, the formula was not used.
8. Prepare a composite listing for evaluation and final revision.	8. The final function, duty, and task statements were placed in sequential order, typed, and reproduced. This listing was then used for evaluation purposes as detailed in the next procedure.

DISCUSSION

The basic problem was that of developing one composite listing from the data contained in 16 separate task analyses. Since the task analysts had assigned numerical ratings of worker or job performance requirements to each task and duty, the first efforts were directed toward using these for developing the composite list. A review of the data that had been sorted on the basis of numerical ratings indicated, however, that this method produced unworkable groupings. They were too heterogeneous with respect to the kinds of worker activities found in each group. A brief summary of the statistical analyses upon which this decision was based are shown in Appendix 6, page 157.

After it was seen that the numerical indices would not provide an adequate basis for this sorting, it was decided that verbal content would have to be used. To accomplish such a sorting, the services of an individual who is familiar with the occupational area is needed, however. In quite a few instances, the meanings of statements regarding specific activities would have misled someone who had a limited knowledge of the situation or the context within which this activity was being performed.

To some degree, having a function, duty, and task hierarchy did facilitate the sorting and organizing of these data.

PROCEDURE 7

Evaluation and Revision of the Composite List

Method	Illustration
1. Identify the bases to be used in evaluating the composite list:	1. Evaluation of the composite list developed in the Occupational Therapy project was planned as follows:
a. Completeness of the list.	a. In preparing for the task analyses, every effort was made to select the facilities in such a way that each activity being performed in the domain of Occupational Therapy would be seen at least once. Thus, in evaluating this list, a necessary question would have to be, "Have all essential activities now being performed in Occupational Therapy been included in this list?"
b. Appropriateness of the activities included on the list.	b. In this study, it was planned that the appropriateness of activities would have to be determined by asking the question, "Were some activities listed that should not have been?" It was immediately evident that "yes" responses could be classified into one or two major categories: (1) An activity has been assigned to the Occupational Therapy program that should be assigned to another group. In other words, the activity is essential, but misplaced. (2) The activity is obsolete or obsolescent and has been or is being replaced by a different or more effective one.

Method	Illustration
c. Accuracy of the verbal statements used to describe the activities included on the list.	c. Here the crucial question would be, "Are the statements correctly worded?" Attention would be directed toward finding statements that were worded too narrowly, too broadly, or inappropriately for the activity they are to describe.
2. Design a survey procedure to be used to evaluate the composite list.	2. The specific evaluation procedures to be used in the Occupational Therapy study were as follows:
a. Identify specific individuals who should be asked to review the list.	a. A representative sample of 96 educators (at both baccalaureate and technical levels) and practioners were selected. Each person selected for this evaluation had enough diversified experience to warrant the assumption that he could identify all activities being performed within the domain of Occupational Therapy.
b. Develop and print the survey form and cover letter explaining need for and methods to be used in survey.	b. The composite list was modified to allow for raters responses. (See Appendix 7 - Cover Letter and Sample Page from Composite List Rating Form, page 165.)
3. Analyze survey results & modify the composite list.	3. In this study, the analytical (and resultant list modification) steps were as follows:
a. Identify activities to be added to the composite list.	a. Since the purpose of the task analysis had been to identify all activities being performed in the domain of Occupational Therapy, each indication that an activity should be added was honored. These activities were organized, assigned numerical ratings by Department of Labor Task Analysts, and placed in logical or sequential positions within the composite list.

Method	Illustration
b. Identify activities to be deleted from the composite list.	b. The number of respondents recommending deletion of each activity were tallied. In those instances where this number was significantly larger than the number expected by chance (.05 one-tail level of significance), the item was deleted.
c. Identify activity statements that should be rewritten.	c. All suggested changes were grouped and then compared with the original statements. If all the suggestions for changing a given statement agreed with each other, the reccommended change was made. When some of the recommended rewordings were opposite in meaning to others, the majority was used. In those instances when the recommended change was in complete disagreement with the original statement, the number of statements that contributed to the original was compared with the number suggesting change. The larger of the two was then used.
4. Put composite list into final form.	4. All the above changes were incorporated into the composite list. It was then typed in final form and reproduced for use in the next processing step.

DISCUSSION

The response to the request for review of this composite list was not complete; of 96 surveys mailed, 63 were returned. Overall, however, this 66% return seems good in view of the fact that the original composite list contained 434 statements to be evaluated.

As a result of this survey, 18 statements were deleted and 31 were added. In addition, the evaluator group suggested 489 changes in wording of the statements.

Even in retrospect, it is felt that this was an essential and productive evaluation procedure.

PROCEDURE 8

Preparation for Conference to Develop Job Descriptions from Composite List

Method	Illustration
1. Identify and/or develop quantitative indices that can be used to group composite list activities into two or more jobs (levels).	1. In the Occupational Therapy study, analyses were conducted to determine which numerical ratings associated with tasks and duties might prove useable in grouping these activities. Several possibilities emerged from these analyses; however, four were finally considered for use. The first was a composite score that provided an indication of cognitive involvement in each duty. The second gave a comparable measure for the perceptual-motor dimension. The third was General Educational Development (GED) as defined in Volume II of the Dictionary of Occupational Titles. The fourth and final index was Specific Vocational Preparation (SVP) - also defined in this same volume.
2. Plan conference to restructure job descriptions from composite list.	2. In this project, the preparations for the conference were as follows:
a. Determine overall conference agenda.	a. On the basis of cost and other considerations, it was decided that this conference would be four days long. After the welcome, introduction of participants, and review of travel expense reimbursement procedures, members of the project staff would review the project to date and define the objectives of the conference. This would be followed by a detailed presentation dealing with data, forms, and procedures designed to facilitate the development of the job descriptions.

Method	Illustration
	The remainder of the conference would be allocated to conversion of the composite list into job descriptions.
b. Establish list of conference participants.	b. The conference participants were to include the project staff, the Task Analysts and Occupational Therapists who collected the task analysis data, project consultants, and members of the Project Planning and Advisory Committee.
c. Determine sequence of steps and design forms to be used in developing job descriptions.	c. At this point, the project staff developed the methods and forms detailed in the next procedure.
3. Complete the physical arrangements for the restructuring conference:	3. The corresponding steps in the Occupational Therapy project were:
a. Notify participants.	a. Each potential participant was sent a notification of the conference. Travel and lodging arrangements were completed for individuals coming from somewhere other than the project center.
b. Schedule a facility for the conference.	b. A facility was reserved which could provide both lodging and meeting rooms.
c. Rent or arrange for transporting of equipment to be used during the conference.	c. It was planned that both a typewriter and a duplicating machine would be used. Rental arrangements for them were completed.
d. Prepare printed materials.	d. Copies of the conference agenda, the composite list, working forms, etc., were prepared.

Method	Illustration
e. Prepare and rehearse presentations.	e. Each member of the project staff was assigned responsibility for part of the formal presentation. Outlines of each topic were prepared and rehearsed.

DISCUSSION

The quantitative indices developed for use in establishing levels or jobs were all potentially useful; however, the scaling created problems. Both the cognitive and the perceptual-motor measures were standardized with a mean of 100 and a standard deviation of 20. Subsequently, it was found that conference participants could not make meaningful use of these two indices. Unfamiliarity with the numerical scales (which was a justifiable reason) might have brought about this choice. If the opportunity to repeat this type of project becomes available, very careful consideration will be given to the numerical scores assigned to each measure. Possibly percentile scores or scores scaled to measures with which the participants are familiar might provide a more effective way of presenting the data.

PROCEDURE 9

Development of Job Descriptions from a Composite List of Activities

Method	Illustration
1. Provide preliminary orientation to participants in job description development conference.	1. In the Occupational Therapy study, the opening and background remarks consisted of the following:
a. Review of major steps in project.	a. A summary review of the project activities preceding this conference was given. Particular emphasis was placed upon those steps that took place subsequent to data collection.
b. Definition of purpose of conference.	b. The purpose was defined by showing how the conference objectives followed from prior activities and how these objectives needed to be accomplished before curriculum development could begin.
c. Review of conference agenda.	c. The conferees were given a printed outline of the agenda for the remainder of the conference. Special attention was given to describing the proposed flow of steps involved in developing the job descriptions from the composite list.
2. Decide upon the criteria to be used in determining the number of jobs (levels) to be developed.	2. Conference participants were given an explanation of the possible criterion indices selected in Step one of Procedure Eight. It was decided that GED should be used as the primary criterion for determing the number of jobs.
3. Tentatively decide upon the number of jobs to be established.	3. After surveying the composite list duty statements and their corresponding GED ratings, the conference participants decided to sort all

Method	Illustration
	activities into four levels. This decision could and would be modified if continuity or homogeneity of worker activities could not be obtained at one or more levels.
4. Review sequence of duty statements and place them in a final working order.	4. This step was undertaken to insure that those persons who would be responsible for creating the positions were in basic agreement concerning the organization of activities in Occupational Therapy.
a. Review previously established organization of composite list.	a. Two major divisions of all activities were Client Service and Supportive Activities. Under each of these headings, subgroups (called process stages) were established. These stages were sequential or functional clusters of activities. Duties and tasks were arranged in a sequential or a logical order within each process stage. The conference participants were given composite lists and asked to suggest changes.
b. Produce final listing which incorporates approved changes.	b. Suggested changes were discussed and approved or rejected in a group decision. To incorporate changes, the existing list was cut apart, pasted together in the chosen sequence, and reproduced.
5. Divide duty-task clusters into levels.	5. For the purpose of familiarizing all participants with the procedure for dividing activities into levels, the first few duties were done by the entire group. After everyone understood the procedure, the participants were broken into two subgroups. Each consisted of three of the

Method	Illustration
	Task Analyst - Occupational Therapist teams that had collected the original data, a task analysis consultant from the Department of Labor or the Ohio Bureau of Employment Services, and an Occupational Therapy consultant. The reason for organizing the two subgroups into three teams each was to provide a majority opinion for each decision. The steps followed in establishing levels were:
a. Assign tasks to levels.	a. A duty worksheet was given to each Task Analyst - Occupational Therapist team. (An example of this worksheet is shown in Appendix 8, page 173.) The tasks, one at a time, were assigned to one or more of the levels defined in step 3 above. In making these assignments. (1) Verbal meaning of the statements were given primary consideration. Particular attention was given to verbs in defining a level of complexity or difficulty. Where a compound statement was involved, the component parts were assigned to the same or different levels, depending upon the characteristics of the verbs. Numerical ratings of data, people, and things involvement were used in assigning ambivalent or difficult to judge cases. (2) Tasks were placed in more than one level if necessary to maintain continuity of worker function.
b. Obtain consensus opinion for each task.	b. After the three teams in a subgroup had independently assigned all the tasks for the

Method	Illustration
	same duty, the worksheets were collected by members of the project staff. A master tally sheet was then prepared. It showed, for each task, the levels to which it had been assigned and the number of teams indicating each level. When two or all three of the teams chose the same level(s), tasks were immediately classified. In instances where a majority opinion was not given (e.g., each team assigned a task to a different level), the original worksheets were returned to the teams and the problem assignments were discussed until a consensus was reached.
c. Rewrite duty and task statements as necessary.	c. After consensus agreement was complete, the task statements for a duty were cut apart, reorganized into levels, pasted onto sheets (one for each level), and reproduced. These reproduced pages were then given to the Task Analysis and Occupational Therapy consultants working with the subgroup that assigned these tasks to levels. The consultants rewrote or modified the statements to accurately reflect activities being performed in each level.
d. Prepare final copies of duty-task clusters.	d. Project staff members collected the completed pages from the consultants. New or revised statements were typed. For each level, the final statements were cut apart, renumbered (tasks were numbered to show their sequential position within a duty - a duties' number indicated its sequence in a job description), pasted on sheets, and reproduced.
6. Review each job description. The questions to be answered in this review are:	6. After all duties and tasks had been divided into jobs, the conference participants were once again

Method	Illustration
	merged into one large group. Each team was given all the duties, arranged in sequential order, for a specific level. These duty-task clusters were reviewed as follows:
a. Is the continuity of worker function adequate? If not, what statements should be added, deleted, or modified?	a. The activities were examined to insure that they would provide a meaningful flow of work for one individual. Particular attention was directed toward identifying continuity-destroying breaks or omissions. Suggested methods for correcting continuity problems were recorded for future action by the project staff.
b. Is the sequence of activities logical and realistic? If not, what changes should be made?	b. In addition to continuity, the reviewers checked the sequencing to insure that all essential activities had been included and that they appeared in a logical or practical order. Again, they suggested changes that needed to be made.
c. Are any task and/or duty statements poorly written? If so, what changes can be made?	c. Here the reviewers looked for grammatical deficiencies or possible inaccuracies in wording. Project staff members recorded suggestions for changes.
7. Compare related activities on all job descriptions. The specific points to be covered are:	7. The review specified in step 6 above was a "vertical" evaluation, i.e., it focused on continuity and completeness within each job description. To insure that the descriptions covered all aspects of Occupational Therapy without unnecessary duplication, a "horizontal" evaluation was also conducted. This comparison was done as follows:
a. Are all aspects of an activity shown?	a. The reviewers laid the descriptions side by side so they could readily compare among the

Method	Illustration
	levels. The descriptions were examined to insure that someone was assigned responsibility for each essential activity. Particular attention was given to those activities, e.g., completion of treatment records, that were distributed across two or more levels. Whenever it appeared that something was missing, project staff members recorded the fact for correction.
b. Is there needed/unnecessary overlap?	b. Areas of overlap were identified. It was determined whether the overlap was really a duplication of effort at more than one level or rather a division of responsibility among levels. When duplications were found two questions were asked: (1) Is this duplication needed to handle workloads? (2) Is it necessary for evaluation or communication purposes? If the answer to either or both of these was yes, the overlap remained unchanged. If, however, the answer was no, the activity was assigned to one level and eliminated from the other(s). Where the overlap was really a division of responsibility among levels, a comparison was made to insure that the activities assigned at each level were appropriate for that job. Inappropriate assignments were noted for change by the project staff.

DISCUSSION

There are several general and specific comments that can be made concerning this procedure and the steps it contains.

First, the project staff members all felt that the four day conference was too short. Both they and the conferees were pressed for time throughout the entire meeting. In a "postmortem" session this problem was discussed. No one could think of a way, other than this conference arrangement, in which this process could have been accomplished as effectively. Trying to complete preliminary steps (e.g., steps 1-4) by mail would be difficult, if not impossible. Thus, it had been concluded that in future efforts to develop job descriptions by this method, more time should be allocated to this procedure.

Second, the total number of conferees appeared to be just about right. If there had been fewer than six Occupational Analyst - Occupational Therapist teams, two-three team groups would not have been possible. Having an odd number of teams in each group allowed for concensus decisions. Having two groups allowed for a division of the duty-task clusters so that more could be accomplished in the available time.

Third, the composition of this conference group was well suited to the job that had to be done. The Occupational Therapists were able to use their "subject-matter" knowledge to make decisions concerning the organization of tasks so as to obtain adequate worker continuity. The Occupational Analysts were familiar with the criteria being used to establish levels and hence were able to expedite that process. Moreover, their knowledge of the organization and wording of statements in a job description facilitated the rewriting of task and duty statements.

The fourth and final general comment deals with the number of decisions that had to be made in this conference. Both the Occupational Analysts and the Occupational Therapists expressed extreme fatigue resulting from the continuous decision making. Possibly, this situation could be alleviated by increasing the number of days or by dividing this larger conference into two smaller ones.

There are three comments regarding the specific methodology used in this study. The first concerns a practical (and maybe ethical) problem. How much should the decision processes be predetermined? In particular, how much should the project staff influence the choice of number of jobs and of the criteria to be used in making this choice? On the one hand, too little direction can force the conferees into a time consuming evaluation of basic data in order to reach these decisions. Too much direction, on the other hand, will place the conferees in a "rubber stamp" position. In this study, the conferees were presented with the results of pre-conference analyses of several equally acceptable criteria that could be used in deciding upon the number of positions to be developed. They selected the specific criteria that was used. Input about the potential number of jobs was given to conference participants. Here, the project staff may have had a greater influence on the number of job levels that were established.

In step 4, the sequencing of activities was reviewed and changed where necessary. There seemed to be at least three advantages to doing this. First, a new (and hopefully less biased) evaluation of the sequencing was completed. Second, this was a productive way of giving the conferees a fresh, yet detailed, overview of the activities included in this list. Third, and finally, this seemed to be a natural way to prepare for the steps that followed. It's likely that this headed off discussions about sequencing that might have occurred in subsequent steps.

The third and final specific comment pertains to the activity detailed under step 5b. By making use of consensus decisions, discussions were restricted to the relatively small number of cases where majority agreement had not been obtained. This saved a great deal of time.

PROCEDURE 10

Final Editing and Evaluation of Job Descriptions

Method	Illustration
1. Incorporate suggestions for revisions that were made in the Job Development Conference.	1. Subsequent to the Job Development Conference, suggested revisions were made in the job descriptions. These revisions were of two types:
a. Corrections to resolve problems within each description, i.e., grammatical accuracy, continuity, and sequencing.	a. Some of the revisions were needed to correct problems within each description. Corrected were deficiences such as unclear or inaccurate wording of statements, inadequate continuity of worker activity, and inefficient sequencing of worker tasks or duties.
b. Corrections to resolve problems between descriptions, i.e., missing functions, unnecessary overlap, and inappropriate assignment of functions to levels.	b. Revisions were made to resolve discrepancies found in a comparison among descriptions. This included insertion of statements into appropriate descriptions to provide for essential activities that were inadvertently deleted, to remove unnecessary duplication of activities, and to reassign duties or tasks that were placed in an inappropriate job description.
2. Do final editing of job descriptions.	2. After necessary corrections were made in the position descriptions, a two-step final editing process was completed.
a. Check job descriptions to insure proper organization and accuracy of written statements.	a. An experienced Occupational Analyst worked with project staff members for a ten-day period to rewrite and reorganize statements as necessary to produce accurate and professionally acceptable job descriptions.

Method	Illustration
b. Check job descriptions to insure grammatical correctness, clarity, and conciseness.	b. After the Occupational Analyst completed his review of the position descriptions, a graduate journalism student edited each job description. She changed, or recommended changes, in statements to improve grammatical correctness, clarity, or conciseness. All such changes were coordinated with the Occupational Analyst responsible for step a. above. This was done to insure that these changes would not produce unwanted or inaccurate statement meanings.
3. Evaluate the final job descriptions. Typical questions that might be answered are these:	3. To evaluate the "practical applicability" of these job descriptions, the descriptions and survey questionnaires were distributed to selected groups. The groups to whom these materials were sent and the kinds of information being solicated were as follows:
a. Does the specified division of worker responsibilities appear to be functionally useful? If not, why? Would persons possessing these qualifications be considered for employment in facilities that use these services?	a. Descriptions and questionnaires were sent to representatives of facilities that use occupational therapy services. They were asked to indicate the extent (yes, no, or partially) to which each position description would be useable in the next five years. A narrative explanation was requested where "partially" or "no" was given as the answer. This question attempted to assess the general applicability of the descriptions. To determine the "employability" of individuals trained to perform the specified activities, the following question was asked for each position: Would a person with competencies necessary to perform these activities be employed in the facility with which you are associated?

Method	Illustration
b. Do the stated activities accomplish essential objectives? Are persons trained in related areas also qualified to perform these functions? Where and to what extent is overlap needed between this and related positions?	b. Descriptions and questionnaires were sent to a representative sample of professional organizations which are related to Occupational Therapy. They were asked to evaluate the importance of each activity for patient/client care. In a second question, they were asked to indicate the extent to which they were qualified to perform each Occupational Therapy activity. A third question asked about the amount of coordination needed, between Occupational Therapy and the related profession, for each listed activity. Essentially, this second questionnaire was used to determine whether the functions being performed in Occupational Therapy were essential, unique, and related to what is being done by related professional groups.

DISCUSSION

To a certain extent, some of the editing might have been accomplished in the Job Description Development Conference if the conference had extended for a longer period of time. There are, however, two reasons why this may not have been practical. First, the participants in this conference were "mentally exhausted" from the continuous decision making. Since the editing involved more of the same, the quality of the output would undoubtedly have suffered. Second, the decisions that had to be made in this editing operation were the kind that would have elicited a great deal of discussion (argument?). For example, correcting grammatical problems via group decisions would be terribly time consuming. This editing is essential; however, it should be done as an individual or team project.

The evaluation of the job descriptions followed two directions. First, they were checked by members of the profession to insure that the final division of responsibilities was feasible. That is, it was felt this step was necessary to verify the assumption that individuals possessing the competencies detailed in the descriptions could and would be hired. Second, persons in related professions were surveyed to guarantee that the activities detailed in the descriptions were neither trivial nor capable of being done adequately by persons in related fields. The data obtained in these two surveys are shown in Appendices 9 and 10, pages 177 and 195, respectively.

PROCEDURE II

Preparation for Development of Curriculum Guides

Method	Illustrations
1. Review specific procedures or theoretical for curriculum development.	1. In the Occupational Therapy project, a thorough review of literature related to curriculum development was completed. The bibliography produced from this review has been included as Appendix II, page 199.
2. Establish format and organization to be followed in each curriculum guide:	2. Specific decisions were made regarding the format and organization of Occupational Therapy curriculum guides.
a. Choose the term to be used to identify an instructional unit.	a. At this point it was obvious that each curriculum guide would have to be divided into instructional units. The term "module" was chosen to identify an instructional unit.
b. Determine whether or not the instructional units can (or should) be classified as two or more types.	b. It appeared that three types of modules would be developed. (1) Clinical Application modules would contain complex performances that students must acquire or practice in a clinical or simulated clinical situation. (2) Information Application modules provide competence in basic skills (and the associated technical knowledge) that are components of the complex performances required in Clinical Application modules. To a major degree, the performances defined in the job description duties correspond with those in the Clinical Application modules. The skills (and knowledge) covered in the Information Application modules generally correspond to those specified as tasks in the job descriptions.

Method	Illustrations
	(3) The third type of module, Basic Information, provides the background knowledge base needed to acquire the skills and knowledge contained in both of the other modules.
c. Define the format for each instructional unit.	c. It was decided that, to be complete, each module must contain: (1) A stated level of job preparation (2) Module type and title (3) Module title and definition (4) Overall performance objectives (5) Related activities in Occupational Therapy (6) Suggested objectives (7) Examples of content (8) Suggested teaching methods (9) Suggested evaluation (10) Suggested instructional media A sample module, showing each of these parts, has been included as Appendix 12, page 207.
d. Select the format and organization for each curriculum guide.	d. In addition to the information contained in each module, a total guide would include: (1) An introduction which includes a summary of the corresponding job description and criteria for selecting students (selection specifications) (2) A table of contents that lists all modules (3) A chart showing a suggested sequencing for the modules (4) The modules

Method	Illustration
e. Plan a format and organization for a complete volume of guides (if more than one curriculum guide are to be produced and bound together).	e. Since four guides would be developed and bound together it was planned that the following sections would be included in the total volume: (1) An introduction that provides general instructions for reading and using the volume (2) The curriculum guides (3) Appendices that contain suggested resource and informational materials
3. Define the sequence of procedures to be followed in developing the curriculum guides. Consideration should be given to identifying project staff members or consultants who will be responsible for each phase of the curriculum guide development.	3. The methodology for the Occupational Therapy project is shown in the next procedure (Procedure 12).
4. Develop the specifications for selecting individuals for the job covered by each curriculum guide.	4. It was felt that specific selection requirements would be needed in order to establish an "assumed minimum" for the instruction to be provided in each module. That is, selection specifications would define the level of language development, etc. Application of this knowledge could reduce the likelihood that the instruction provided in a module extends unnecessarily into basic education. A description of the selection specifications and the steps involved in their development have been included as Appendix 13, page 209.

DISCUSSION

Planning for curriculum development proved to be a difficult and time consuming process. There seemed to be three obvious reasons for this.

First, it was necessary to define potential user's needs and backgrounds to plan for a format and organization of materials that would be appropriate.

Second, decisions concerning the content of these guides and the procedures to be used in developing them proved to be interdependent. In some instances, "ideal" content or methodology could not be achieved because of limitations imposed by data or "know how" or both.

Third, theories for curriculum development (both using and not using task analysis data) have been well established. There was, however, no model that provided the detailed and explicit methodology that was needed in this study. Hence, planning was largely a group process situation in which problems were resolved by presenting, discussing, revising, discarding, and accepting ideas.

PROCEDURE 12

Development of Curriculum Guides

Method	Illustrations
1. Convert job description task statements into process-product statements and place in a format that allows for sorting.	1. To facilitate the conversion of worker activities (tasks from the job descriptions) into instructional needs (educational objectives), the following two step process was completed:
a. Define the process and the product for each worker activity.	a. Each job description task statement was analyzed to identify two components: The specific worker activity (process) and the purpose for or outcome of this activity (product).
b. Reproduce each process-product statement in a format that allows for hand sorting.	b. Each process-product statement was typed on a separate 3" x 5" card. A five digit code was assigned to each card. This code identified the specific job task from which the process-product statement was obtained.
2. Identify the knowledge and skills that must be taught for each process-product activity. This is done in two steps:	2. The learning needed for each process-product activity was considered as being the knowledge and skills an individual would have to possess to accomplish a goal (stated as a product) by performing specified tasks (stated as a process). These learnings were defined in two steps:
a. Determine prerequisite knowledge and skills the individual can be assumed to have at the time he enters the educational program.	a. First, the general educational background was determined. This was done by defining the language, mathematical, and reasoning qualifications assumed for persons entering this educational program. (See Appendix 13, page 209.)

Method	Illustrations
b. List the instructional topics that will be needed beyond the prerequisites established in 2a. above. These topics will tend to be more vocation or profession oriented than those emerging from the above step.	b. The Project Administrator, the Curriculum Specialist, and consultants (who were Occupational Therapists) participated in the development of a list of instructional topics for each process-product activity. These instructional topics were designed to bridge the gap between the skills and knowledge established in Step 2a. and those required for performance of the activities in the process-product statement. The instructional topics were expressed as broad categories rather than detailed and precise instructional items. For example, categories such as Normal Human Development, Communication, and Interpersonal Relationship Skills were listed for the statement, "Converses with client (process) to establish rapport (product)". These were two reasons for using broad categories at this stage: (1) Having a relatively small number of categories would facilitate the subsequent development of groupings detailed in Steps 3 through 6 below. (2) The broad categories would be subdivided into specific instructional units after the grouping process was completed. (See Step 9a. below.)
3. Separately for each job description, prepare a list of subject matter or "curriculum essentials" headings that encompass all of the needed learnings. Classify each needed learning under the appropriate group.	3. For this study, curriculum essentials recommended by the American Occupational Therapy Association were used. These six essentials are: a. Biological Sciences b. Behavioral Sciences

Method	Illustrations
	c. Physical and Psychosocial Dysfunction d. Occupational Therapy Evaluation and Treatment e. Occupational Therapy Skills f. Clinical Experience Each needed learning was classified under one of the first five headings. The sixth heading, Clinical Experience, was held for the synthesis of these learnings in a clinical setting.
4. Place the needed learnings in sequential order under each "curriculum essential" heading. Revise and retitle needed learning groupings where practical and logical.	4. The needed learnings were placed in logical order under each curriculum essential heading. For example, Normal Human Structure and Function was placed ahead of Body Mechanics since a student would have to know something of body structure before he could understand how it moves. After the needed learning list for each job description was sequenced, the listing was carefully reviewed to identify items that should be revised. In making these decisions, one major criterion was applied, i.e., whether or not the needed learning appeared to have the potential for being transformed into a reasonably-sized, independent learning unit. If a needed learning was judged to be too molecular, it was combined with another to which it logically could be attached. Frequently, the contributing process-product statements were reviewed in making this determination. Needed learning titles were modified as required to reflect this change.

Method	Illustrations
	If a needed learning was judged to be too global, it was divided into two or more topics. In virtually all cases, the contributing process-product statements had to be reviewed when making these decisions. Again, appropriate needed learning titles were written for the new topics.
5. Develop a coding system that can be used to identify each needed learning.	5. A three-digit coding system was established. The first digit indicated the curriculum essential heading (1 = Biological Sciences, 2 = Behavioral Sciences, etc.). The second and third digits indicated the position of a specific needed learning under the curriculum essential heading. For example, the number 211 indicates the eleventh needed learning listed under heading 2, Behavioral Sciences. Since these needed learnings had been placed in sequential order, the last two digits also provided a general indication of which learnings were prerequisite to others (e.g., learnings 201 through 210 might have to be completed before 211 could be learned).
6. Determine the type of instructional units to be developed for the needed learnings listed under each "curriculum essentials" heading.	6. To help clarify and organize the remaining steps in curriculum development, it was necessary, at this point, to establish the type of curriculum module to be developed for each curriculum essential category.
a. Identify "curriculum essentials" headings concerned with instruction that is prerequisite to learning skills and knowledge needed to perform the activities specified by process-product statements.	a. It had been previously determined that three types of modules would be constructed (see Procedure II, Step 2b.). The first three curriculum essential groups (i.e., Biological Sciences, Behavioral Sciences, and Physical and Psychosocial Dysfunction) would include knowledge and skills that are prerequisite to learning the activities described in the

Method	Illustrations
	process-product statements. Thus, it was decided that Basic Information modules would be developed for these three curriculum essential groups.
b. Identify "curriculum essentials" headings under which direct learning of performance of the process-product activities would be subsumed.	b. The fourth and fifth curriculum essentials (i.e., Occupational Therapy Evaluation and Treatment and Occupational Therapy Skills) would encompass instructional topics that result in mastery of activities described in the process-product statements. Instructional units developed for these two groups would be designated Information-Application modules.
c. Identify "curriculum essentials" headings (if any) under which the process-product activities are applied in a work or work simulation setting.	c. The sixth curriculum essential, i.e., Clinical Experience, would be developed into Clinical Application modules. The instructional topics would be drawn from the duty statements in the job descriptions. It was assumed that these experiences would allow for a synthesis of the learnings acquired in the Information-Application modules. This would seem to be a reasonable assumption in view of the fact that the duty statements are a synthesis of task statements (upon which the process-product statements are based).
7. Assign the appropriate needed learning codes to each process-product statement. Logically, this will be done in a two step procedure:	7. At this point the needed learnings could be considered as being divided into two major groupings. Those listed under the three curriculum essential headings placed in the Basic Information category defined the background or general prerequisite learnings for process-product activities. The needed learnings appearing under the two curriculum essential headings placed in the Information

Method	Illustrations
	Application category defined the specific knowledge and skills involved in performance of the process-product activity. In light of this distinction, assignment of needed learning codes to the process-product activities followed a two step pattern:
a. Assign codes for needed learnings that are prerequisites for learning the process-product activities.	a. Each process-product statement was checked against the needed learnings listed under the Basic Information category. For each needed learning that was prerequisite to the process-product activity, the corresponding three-digit code was written on the 3" x 5" card containing the process-product statement. The needed learnings assigned to each process-product statement did not exactly coincide with the list of instructional topics originally developed from that statement. There were two reasons for this: (1) Transformation of the instructional topics into needed learnings frequently resulted in changes in titles or planned content or both. Hence, it was often difficult to establish a one-to-one correspondence between the original topics and the final list of needed learnings. (2) When the instructional topics were being inferred from the process-product statements, there was no reference list from which the topics could be selected. Thus, important topics could be, and were, easily overlooked for individual process-product activities. By the

Method	Illustrations
	time the composite needed learnings list was completed, however, these individual omissions had been corrected. As a result, a complete reference list was available when needed learnings were being coded on the 3" x 5" cards.
b. Assign codes for needed learnings that (1) provide the specific knowledge and skills required to perform the process-product activities or (2) are enhanced by or dependent upon ability to perform the process-product activity.	b. Each process-product statement was checked against the needed learnings listed under the Information-Application category. In this case, any needed learning to which a process-product activity was related was coded on the appropriate 3" x 5" card. Two types of relationship were being sought: (1) All learnings that were component parts of the process-product activity were coded. Here the emphasis was placed upon knowledge and skills directly involved in learning to perform the activity itself. (2) All concurrent or subsequent learnings that could be influenced by ability to perform the process-product activity were also coded. The objective was to identify learnings which would be enhanced by or dependent upon ability to perform the process-product activity.
8. Sort all process-product statements having the same code into one group. Begin with the needed learning group that is sequentially in the first position.	8. All 3" x 5" cards showing the same code were sorted into a single group. For example, the process-product statements coded 101 were gathered into a single category. This process was started with the needed learnings classified under Basic Information.

Method	Illustrations
9. Develop an instructional unit for each needed learning group. This can be accomplished in the following 9 steps:	9. A curriculum module was developed for each group of process-product statements by a nine step method:
a. List specific instruction required for each process-product statement.	a. Each process-product statement was reread and specific units of instruction were identified and listed. These differed from the needed learnings established in Step 2 in that the units of instruction were detailed sub-headings within a needed learning category.
b. Organize specific instruction items into a single composite list.	b. The instructional items were organized into a composite list. Duplications were eliminated by combining the same items. Similar items or those that could be taught together were merged and renamed.
c. Reorder the items into a logical sequence.	c. Next, the instructional items were placed in sequential order. As in Step 4, a logical flow of learning was used as the criterion in making this determination.
d. Write overall performance objectives that specify knowledge and skills students are expected to have at completion of the instructional unit.	d. At this point, it appeared reasonable to assume the process portions of the process-product statements furnished a clear definition of the scope and depth of learning each module would have to provide. Using these to establish parameters, specific learnings inferred from the list of instructional items were synthesized into student performance objectives. These objectives were usually general and few in number since they were intended to describe the major areas of learning to be acquired in the module.

Method	Illustrations
e. Write specific performance objectives that detail the knowledge and skills students must acquire to accomplish the overall objectives.	e. To furnish logical bridges between overall performance objectives and units of instruction, suggested specific performance objectives were written. These were inferred from the units of instruction using the process statements to establish limits. The specific objectives were statements of terminal student behaviors or performances that might be used as bases for judging whether or not the knowledge and skills provided in the unit had been learned. A complete list of the specific objectives would, in turn, provide a basis for judging whether or not the overall objectives had been accomplished.
f. Write examples of content that can be used to accomplish specific performance objectives.	f. Examples of appropriate subject matter topics were written for the specific performance objectives. These provided suggestions concerning content that could be used to teach the knowledge and skills required for accomplishing the specific performance objectives.
g. Write summary of job goals to which the instruction unit is related.	g. Using the product portions of the process-product statements, a summary of related activities in Occupational Therapy was written. This summary was included to show the relevance of the module and to provide instructors with examples of application that can be stated or discussed in the teaching process.
h. Write a title and short descriptive definition for the instruction unit.	h. Referring to the overall performance objectives a title and a short descriptive definition of the module was written.

Method	Illustrations
	This nine-step process was repeated until a module was developed for each needed learning group in the Basic Information and Information-Application categories.
10. Establish a suggested sequence for the instructional units.	10. After the Basic Information and Information-Application modules for each guide were developed, they were placed in sequential order. This was done in two steps:
a. Determine relationships among instructional units.	a. On the basis of the overall performance objectives and subject matter content, the relationships among modules were determined. They were found to be of four types: (1) Some modules were independent of each other. This was especially evident within each of the two type of module groups. Two modules were judged to be independent if the learning of one had neither a negative nor a positive influence on learning of the other. (2) Some modules appeared to have a concurrently facilitative relationship with others. For example, the critical reading portion of the module on Medical Journalism might reinforce topics taught in Introduction to Research Methodology; however, the learning of neither module is dependent upon prior learning of the other. These were designated as simultaneous learning relationships.

Method	Illustrations
	(3) Some modules appeared to have intrinsic relationships with others. For example, the module on Treatment Planning could easily be incorporated into modules on Occupational Therapy in Mental Health and Occupational Therapy for Physical Function. These were designated as having a potential for clustering.
	(4) Finally, modules having a linear relationship to each other were identified. In these instances, the learning to be accomplished in one module required a knowledge of the information covered in one or more of the others. Generally, each Basic Information module had linear relationships with two or more of the modules in the Information-Application category. The term related was used to designate this linear dependence.
b. Develop a graphic or tabular chart to show suggested sequencing of instructional units.	b. A flow chart was drawn for the modules thus far written for each guide. Vertical lines were used to indicate linear relationships and horizontal ones to indicate those concurrently related. (See Appendix 12, page 208.)
II. Determine need for additional instructional units that will provide experience in integrating knowledge and skills acquired in those already developed. Write supplementary units as follows:	II. It had been planned that Clinical Application modules would be written; however, the exact need for and characteristics of these could not be established until the Basic Information and Information-Application modules were completed and sequenced. The development of these modules was accomplished in seven steps:

Method	Illustrations
a. Compare work activities in the job description with experiences provided in the instructional units. Identify instructional unit experiences that need to be synthesized into work activities.	a. To perform this step, duty and task statements in the job description were compared with the overall performance objectives and the statements of related activities in Occupational Therapy contained in the modules. Work activities that were not taught in one module as a complete operation were identified.
b. Write a title, a short description, and a listing of the contributing instructional units for each activity that must be covered in its entirety.	b. As each unintegrated activity was identified, a short title and description were written for it. In addition, the titles of Basic Information and Information-Application modules that contributed to the instruction for this activity were listed. This was done for two reasons: (1) In listing these contributing modules, there was a double check to insure that all of the component knowledge and skills had been covered. (2) These lists would subsequently be useful in merging the Clinical Application modules into the suggested sequence established in Step 10b.
c. Prepare a sequenced composite list of needed instructional units. Combine topics as necessary to provide smooth flowing and complete learning experiences.	c. After all needed modules were listed, the titles were rearranged in sequential order. The organization of activities in the job description was used in making these judgments. The titles were then reviewed to determine which could be combined. Although each title represented a complete work activity,

Method	Illustrations
	some of these activities were closely sequenced in the job description. Whenever a combination of related activities would result in a more meaningful or complete educational experience, they were merged. Titles and descriptions were modified as necessary to reflect changes in module content.
d. Write an overall performance objective for each instructional unit.	d. An overall performance objective was written for each needed module. These differed from those written in Step 9d. in that they described a work activity rather than knowledge and skills. To a major degree they more nearly resembled the statements of related activities in Occupational Therapy that appeared in the other two types of modules.
e. Write specific performance objectives that detail the activities a student must perform to accomplish the overall objectives.	e. For each module, specific performance activities were written. In this operation, the specific objectives were inferred activities that would permit the transformation of component knowledge and skills (states as overall performance objectives in the contributing modules) into work activities (stated as overall performance objective in Step 11d).
f. Write examples of content that can be used to accomplish specific performance objectives.	f. As in Step 9f., suggested subject matter topics were written for the specific performance objectives, extrapolated from the examples in the job descriptions.

Method	Illustrations
g. Rewrite module titles and definitions where necessary.	g. After the above statements had been written for each module, the original titles and descriptions (developed in Steps 11b. and c.) were reviewed and rewritten where necessary to reflect final module content.
12. Integrate additional instructional units into preliminary sequencing previously established.	12. The relationships between each Clinical Application module and the previously developed Basic Information and Information-Application modules were determined. The Clinical Application modules were then merged into the suggested sequence of modules.
13. Determine need for instructional units covering affective aspects of work activity. Write units to satisfy identified need.	13. The same individuals who had evaluated the composite list of activities performed in Occupational Therapy (see Procedure 7 - Step 2) were asked to rate each activity in terms of the three most important aspects of worker function. These three functions were to be selected from a list of 34 areas divided among the cognitive, affective, and psychomotor domains. The results of this survey are included as Appendix 14, page 227. On the basis of survey responses, it was felt that some guidelines for instruction in affective objectives should be provided. Hence a set of affective applications was written for each guide. There were three parts to each application: A title and definition, an overall performance objective, and suggested questions about learners' performances that relate to the desired affects.

Method	Illustrations
	The overall performance goals were synthesized from job description activities, and their related affects, as identified by the survey respondents.
	The questions about learners' performances were inferred outcomes that might be observed in a clinical or simulated clinical situation.
	The title and definition were quoted from descriptions of each affective level in *A Taxonomy of Educational Objectives, Handbook II: The Affective Domain*, edited by B. Bloom and others.
14. Develop supplemental information that will facilitate implementation of each curriculum guide.	14. To assist potential users, three types of instructional aids were prepared and included as appendices:
a. Instructional methods.	a. Educational literature was reviewed to identify different teaching methods and ways these methods can be explained. From this review, a summary of teaching strategies was written. This included descriptions of the various teaching techniques, general guidelines for their effective use, and specific examples of each. Suggested appropriate teaching methods were then written into each module.
b. Evaluational procedures.	b. After a review of literature, a summary of evaluation procedures was written. This included a general introduction, a description of frequently used evaluational techniques, and an example of each.

Method	Illustrations
	Appropriate evaluation methods were then selected for each module from this summary.
c. Instructional media.	c. Occupational Therapy educators were surveyed to develop a list of textbooks, periodicals, audio and video tapes, slides, etc. that could be used in instruction. These were then arranged by subject matter topic and type of media. Media appropriate for use with each module were then selected and listed in the module.
15. Write an introduction for each curriculum guide. This might include:	15. An introduction was written for each guide. Each introduction included:
a. The related job description.	a. A summary of the job description upon which the guide was based.
b. Selection specifications for applicants.	b. The specifications for selecting applicants into the curriculum.
c. A table of contents.	c. A table of contents showing all of the modules for that curriculum.
d. Suggestions to the user for implementation of the material.	d. Suggestions for implementing the guide: (1) Suggestions for clustering modules. (2) Suggestions for sequencing modules. (3) Suggestions for coursework assembly. (4) Suggestions for affective learning.

Method	Illustrations
16. Write an overall introduction for the total volume of curriculum guides. This might include:	16. A general introduction was written. It consisted of the following:
a. Contents of the curriculum guide volume.	a. A table of contents for the overall volume.
b. A brief summary of the curriculum development project.	b. A descriptive summary of the Occupational Therapy project.
c. A description of the format used in each guide.	c. A detailed description of the format and contents of each guide.

DISCUSSION

Step 2a. specifies the determination of prerequisite knowledge and skills the individual can be assumed to have at the time he enters the educational program as the first stage in identifying the knowledge and skills that must be taught for each process-product activity. Ideally, there should also be an awareness of knowledge and skills that have been acquired in previous instructional units. This presumes, however, that it is know where, in the total curriculum, the process-product learning occurs. Thus, it is only after a firm sequence of instruction has been established that additional precision can be introduced into this step.

Throughout these procedures, it seems evident that knowledge of the occupation is helpful. From Step 9. on in this procedure, however, the need for this type of background becomes critical.

In determining curriculum guide contents, it seems essential to determine the nature of both the potential users and learners, and to involve them as much as possible in guide development.

Decisions concerning guide format, language, and contents are directly related to the usefulness of each to potential users. The guidance of an educator to assist and advise practitioners and other educators in the specific area of health care was needed, but the guides were developed within the context of needs of potential users. Although extensive advice from Occupational Therapists was sought in this project, their more direct involvement in format, language and content decisions is probably important. Potential learners were not consulted in this project. It may be advisable to create staff positions of "curriculum authors" or "curriculum advisors" who are representative of several levels of practitioners, educators, and learners in the profession during the curriculum development phase. These staff members could then perform the decision making, module writing, and module revision tasks under the coordination of a project administrator with guidance and advice from a consultant educator.

Precision may not be necessary in a curriculum "guide". Decisions concerning sequencing, clustering of modules, course work content, affective learning placement, and clinical experience design are interdependent with the nature and needs of the learner, the educational requirements of the learning institution, the availability of academic and clinical teaching resources, and the current and future requirements of the health care community in which the learner will be employed. Implementation of these guides will necessarily be related to those factors.

PROCEDURE 13

Evaluation of Curriculum Guides

Method	Illustrations
1. Determine what evaluations are needed for each curriculum guide.	1. In this project, it was decided that a complete evaluation of each guide would have to be broken into four parts: the introduction, each module, all modules combined, and the appendices.
2. Design an evaluation procedure (and related forms).	2. The evaluation to be conducted for each of the four parts was as follows: a. Introduction - The evaluator would be asked to read the introduction to the curriculum guide, to rate his attitudes toward it by marking one of five alternatives for 11 descriptive adjectives, and to write suggestions for changes. b. Each module - The evaluator would be asked: (1) To identify the specific module being evaluated. (2) To rate the performance objectives and the statement of related activities in Occupational Therapy in terms of their being understandable and necessary. In addition, the evaluators would provide written suggestions for change where needed. (3) To note added information that should be in the module and any comments regarding its overall format or content.

Method	Illustrations
	c. The overall curriculum guide - The evaluator would be asked: (1) To rate his attitudes for the same 11 adjectives used with the introduction. (2) To describe needs for additional modules. (3) To indicate needed changes in module sequencing. (4) To indicate changes that might improve overall module format.
	d. The appendices - For each appendix, the evaluator would be asked: (1) To rate his attitudes for each of the 11 adjectives. (2) To indicate changes that should be made.
	Forms were then designed to provide evaluators with a standardized format for these evaluations. A set of these forms has been included as Appendix 15, page 235.
3. Select individuals to evaluate the curriculum guides. Two criteria that would seem appropriate in making this selection are:	3. Eight individuals were selected to evaluate these guides. In making the selection, the following two points were taken into consideration:
a. Each evaluator should be an educator since the guides will be used by this group.	a. Each evaluator was an Occupational Therapist who was very familar with practice and education. They were chosen because the guides were designed for use in establishing new programs or revising existing curricula.

Method	Illustrations
b. Each evaluator should have expertise in a major aspect of the work activities covered in the guides.	b. There were two dimensions of expertise that had to be considered in choosing evaluators for the four guides developed in this project. First, Occupational Therapy activities can be divided into those related to (1) physical dysfunction, and (2) psychological dysfunction. Frequently, therapists will have greater knowledge in one of these. Second, each guide was written to cover a rather restricted portion of the total spectrum of activities found in Occupational Therapy. Again, every therapist would tend to be more familiar with one segment of this range. The eight persons selected to serve as evaluators were Occupational Therapists who could provide valid comments for at least three of the four guides with a primary focus on one of the two types of dysfunction.
4. Analyze the data obtained from the curriculum guide evaluators. Synthesize and summarize results and incorporate needed modifications into guides.	4. After the evaluations were completed, the obtained data were analyzed and then used as a basis for modifying the guides. A summary report of this evaluation has been included as Appendix 16, page 245.
5. Conduct a final review of each guide for clarity and grammatical correctness.	5. After content and format revisions were completed, each guide was reviewed by individuals who had completed undergraduate programs in English. They edited for grammatical correctness, consistency of writing style, and clarity of writing. Suggested changes were made.

DISCUSSION

To a major degree, the evaluation detailed in this procedure assessed only content, usefulness, and grammatical aspects of the guides. The ultimate evaluation of their usefulness can only be determined by observing the performance of persons educated in programs developed from them.

In addition to the evaluation described in this procedure, the curriculum guides were reviewed in a two-day conference of the Project Planning and Advisory Committee. The minutes of this meeting have been included as Appendix 17, page 251.

APPENDIX 1

ORGANIZATION OF PROJECT STAFF

Planned Organization of Project Staff

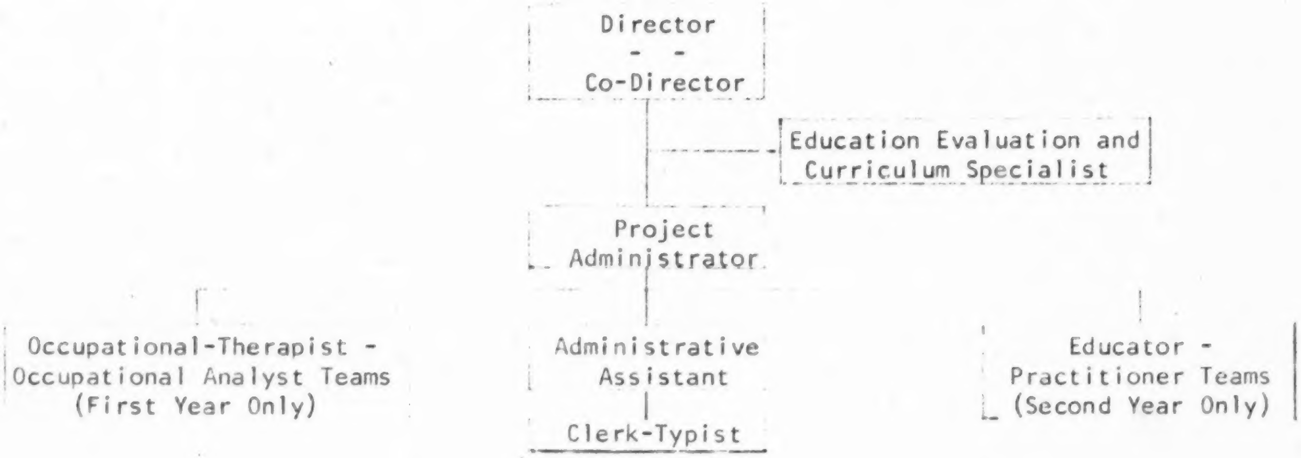

Figure A

Actual Organization of Project Staff

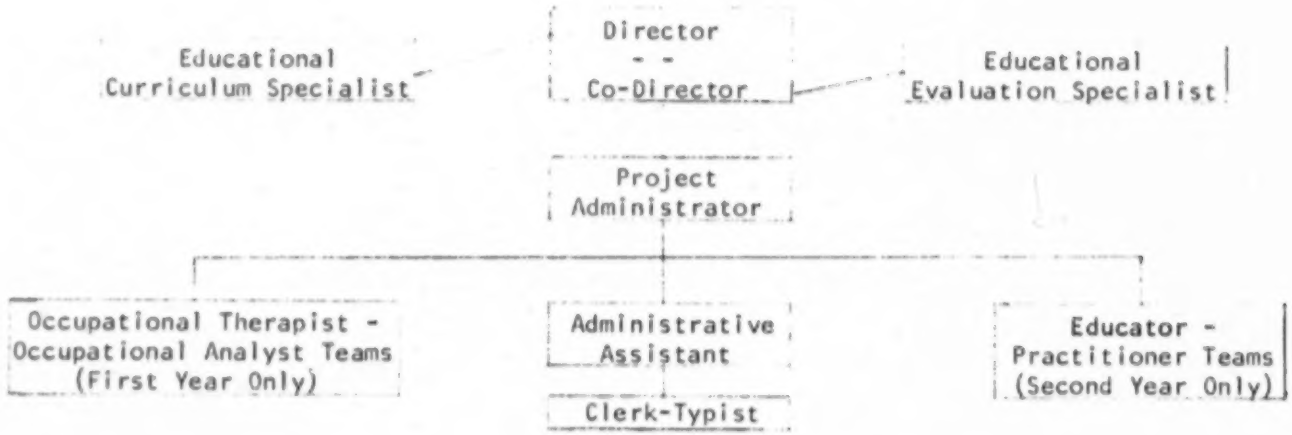

Figure B

APPENDIX 2

OCCUPATIONAL ANALYSIS HANDBOOK

APPENDIX 2

OCCUPATIONAL ANALYSIS HANDBOOK

TABLE OF CONTENTS

Occupational Therapy Project Information — Page 81
Procedures for Data Collection and Completion of Occupational Analysis Forms — 82
Procedures for Scheduling Visits — 99
Procedures for Typing Services — 101
Procedures for Submitting Occupational Analysis Forms — 103
Procedures for Expense Sheets — 104
Procedures for Consultant Reimbursement — 107
Exhibit A Team and Facility Information — 109
Exhibit B Definitions: Types of Occupational Therapy Services and Qualifications for Practice — 111
Exhibit C Description of Structure to be Used in Occupational Therapy Analysis — 113
Exhibit D Suggested Functions and Duties in Occupational Therapy Practice — 117
Exhibit E Explanation of Relationships Within Data, People, Things Hierarchies — 121
Exhibit F Explanation of Worker Trait Components — 125

Occupational Therapy Project Information

Name, Title, Address, and Telephone Number of Staff Member	Project Activities For Which Staff Members are Responsible
Caniscioni, John S. Project Co-Director The Ohio State University College of Medicine 390 West 9th Avenue - Room 3172 Columbus, Ohio 43210 (Tel.) 614- 422-9036	1. Definition and clarification of occupational analysis terminology. 2. Detailed procedures for completing survey forms.
Hartsook, Rosa M. Project Administrator The Ohio State University School of Allied Medical Professions B-216 Starling-Loving Building 410 West 10th Avenue Columbus, Ohio 43210 (Tel.) 614- 422-2155	1. Establishing contacts with facilities. 2. Schedule dates for survey. 3. Questions concerning all other procedures. 4. Disbursement of grant information.
Jones, Laurie J. Project Secretary The Ohio State University School of Allied Medical Professions B-216 Starling-Loving Building 410 West 10th Avenue Columbus, Ohio 43210 (Tel.) 614- 422-2155	1. Providing forms, materials, etc., needed in surveys. 2. Reimbursement for expenses. 3. Collection of completed occupational analysis forms.

Procedures for Data Collection and Completion of Occupational Analysis Forms

A. Form A - OCCUPATIONAL THERAPY DEPARTMENT DESCRIPTION

Note: General purpose is to give an overall picture of Occupational Therapy operation and staffing pattern within the facility. Method is to go through sheet from top to bottom indicating what is to be entered in each space.

Items 1-4 are general identifying information to be used in the event a report must be taken apart for compiling a composite listing, etc.

1. Facility name and number.

   Copy this from listing in Exhibit A.

2. Team number.

   Your team number as shown in Exhibit A of your handbook.

3. Dates of survey.

   Begin with first day on which data collection began and end with date reviewer signs analysis (see bottom of Form A).

4. Number of pages in report.

   Each sheet is a page; thus, this is to be numbered Page 1 in lower right corner.

Note: Items 5-9 give an overview of the size and general operation of the department. This information should be obtained through an interview with the Occupational Therapy Department Head.

5. Total number of paid employees in department.

   This is to include all persons, irrespective of title or job responsibilities, who are on the Occupational Therapy department's budget. Part-time is to include only those persons working exclusively in Occupational Therapy.

6. Type(s) of dysfunction treated.

If psychosocial *and* physical dysfunctions are treated, check the space after each. Don't check other and then write in "both".

7. Type(s) of service provided.

Check all that are applicable. These terms are defined in *Exhibit B*.

8. Age range of patients/clients.

General minimum and maximum ages of patients accepted for service.

9. Number of volunteer hours.

Here, the staff is interested in the number of volunteer worker hours provided to the Occupational Therapy department per week.

Note: Items 10-14 provide specific information about the titles being used, entrance requirements for each position, and the number of persons working under each title. Begin this listing with the Department Head, then the position at the next lower level of responsibility, etc.

10. Title.

This is to be the official title assigned to this position by the facility being surveyed.

11. Minimum formal training required.

This should be based *not on the qualifications of current staff*, but rather, on the minimum that *is being used in hiring new personnel* for this position.

12. Minimum experience required.

Again, this should be the minimum that is being used in hiring.

13. Required qualifications.

These terms are defined in *Exhibit B*. Check one or more as applicable.

14. Number of persons.

Indicate in the blanks the number of paid full-time and/or part-time persons currently budgeted for this position. Thus, these numbers are to include both filled and presently unfilled positions. Be sure that the sums of these figures equal the totals discussed under instruction 5.

There is space for four positions on this form. If there are more than four different position titles being used, continue your listing on the Form A Continuation Page. Be sure this Continuation Page is numbered Page 2. Also fill in the facility name and the facility and team numbers at the top of this page.

15. Occupational Analyst, Occupational Therapist, and Typist.

Signatures of the designated individuals are to be written in the appropriate spaces on Form A.

16. Reviewed by ______________________________.

After the report is completed and typed, it is to be reviewed by the Occupational Therapy Department Head. If any revisions are necessary, they are to be made at this time (the report need not be retyped; legible pen and ink corrections will be acceptable.) The reviewer is to sign his name, title, and date to indicate that the report is accurate and complete.

17. Page number.

This is the first page of the report; therefore, it is to be numbered Page 1.

Note: After Form A has been completed, ask the Department Head for a copy of an organizational chart for the health care facility. This is needed to provide an overall picture of the ways in which Occupational Therapy departments are fitted into administrative structures. If a chart is not available, ask the Department Head to describe the organization and sketch a chart on the reverse side of Form A. Personal names are not needed; however, division, department, etc., titles are. If a chart is available, include it as the last page in the completed report.

Form A - Occupational Therapy Department Description

Facility Name ______________________________ Facility # ________
Team # _____ Dates of Survey ___________ No. of Pages in Report _____

General Information

Total number of paid employees in department: Full-time _____ Part-time ___
Type(s) of dysfunction treated: Psychosocial __ Physical __ Other ______
Type(s) of service: Acute/Restorative __ Preventive __ Maintenance ______
Age range of patients/clients ________ No. of volunteer hours ______

Staffing Pattern (Begin with Department Head)

1. Title ____
   Number of Employees ______ Full-time _____ Part-time ______
   Minimal Formal Training Required ___________________________
   ____
   Minimum experience required ________________________________
   ____
   Required qualification(s): Licensure __ Certification __ Registration __
2. Title ____
   Number of Employees ______ Full-time _____ Part-time ______
   Minimal Formal Training Required ___________________________
   ____
   Minimum experience required ________________________________
   ____
   Required qualification(s): Licensure __ Certification __ Registration __
3. Title ____
   Number of Employees ______ Full-time _____ Part-time ______
   Minimal Formal Training Required ___________________________
   ____
   Minimum experience required ________________________________
   ____
   Required qualification(s): Licensure __ Certification __ Registration __
4. Title ____
   Number of Employees ______ Full-time _____ Part-time ______
   Minimal Formal Training Required ___________________________
   ____
   Minimum experience required ________________________________
   ____
   Required qualification(s): Licensure __ Certification __ Registration __

(Include organizational chart for total facility.)
Occupational Analyst ______________________________________
Occupational Therapist ____________________________________
Typist ____
____

Reviewed by ____
(name) (title) (date)

(This form adapted from one developed by the United States Department of Labor, Manpower Administration, Division of Occupational Analysis and Career Information.)

Page # ________

Form A - Occupational Therapy Analysis

Continuation page (Continued from Page # _____)

5. Title ______________________________

Number of Employees __________ Full-time _______ Part-time _______

Minimum formal training required ______________________________

____

Minimum experience required ______________________________

____

Required qualification(s): Licensure __ Certification __ Registration __

6. Title ______________________________

Number of Employees __________ Full-time _______ Part-time _______

Minimum formal training required ______________________________

____

Minimum experience required ______________________________

____

Required qualification(s): Licensure __ Certification __ Registration __

7. Title ______________________________

Number of Employees __________ Full-time _______ Part-time _______

Minimum formal training required ______________________________

____

Minimum experience required ______________________________

____

Required qualification(s): Licensure __ Certification __ Registration __

8. Title ______________________________

Number of Employees __________ Full-time _______ Part-time _______

Minimum formal training required ______________________________

____

Minimum experience required ______________________________

____

Required qualification(s): Licensure __ Certification __ Registration __

Page # _______

B. FORM B - OCCUPATIONAL THERAPY TASK ANALYSIS

Note: In each facility surveyed, occupational analysis data for each position listed on Form A are to be obtained. Assuming the Department Head is an Occupational Therapist, Registered, list the functions, duties, and tasks of his position first. Then interview and observe other Occupational Therapists, Registered to augument or modify the information contained in this position description. The end product will be a composite description of the activities performed by all Occupational Therapists, Registered. Then begin a new position description for the first non-Occupational Therapist, Registered position listed on Form A. Continue in this manner until all positions have been described.

There are two forms for use in recording and evaluating tasks, duties, and functions performed in Occupational Therapy departments. Each separate duty is to be listed on a new Form B. The Form B continuation page is to be used in the event the listing of tasks for a given duty exceeds the space provided on the Form B page.

For purposes of this analysis, worker activities have been divided into three levels: task, duty, and function. A definition of these three levels has been included as Exhibit C in the handbook.

Functions and the kinds of duties that might be found under each are listed in Exhibit D. These are provided as general guidelines and may not be usable as THE detailed format at each facility.

1. Position title. (Form B only)

   a. Write in the position title (from Form A) of the person performing this function and duty.

2. Function. (Form B only)

   a. Circle in the function under which the specific duty and tasks fall. If the function is classified as "Other", give it a brief title.

3. Duty. (Form B only)

   a. The duty statement is to be written as specified in Exhibit C. It is suggested that a rough draft of the duty statement be written prior to a listing of the tasks. This will provide an overall content that can be used as a basis for evaluating tasks in terms of their importance and sequence. After all tasks have been listed, the duty statement can be revised as needed for purposes of clarity or accuracy.

4. Type of duty. (Form B only)

   Using the guidelines given in Exhibit C, indicate by a check which type of duty this is.

5. Task number. (Both Form B and the Form B Continuation Page)

   The number one is assigned to the first task, two to the second, etc.

6. Task description. (Both Form B and the Form B Continuation Page)

   The task descriptions (what and how as specified in Exhibit C) are to be written in the sequence in which they occur.

7. D-P-T. (Both Form B and the Form B Continuation Page)

   For each task, the Occupational Analyst is to estimate the level of worker involvement with data, people, and things as detailed in Exhibit E.

8. Estimated worker trait requirements. (Form B only)

   Worker trait requirements (as detailed in Exhibit F) are to be estimated for each duty by the Occupational Analyst.

9. (Continued from Page #) (Form B Continuation Page only)

   Enter the page number from the prior page.

10. Facility #, Team #, & Page # (Both Form B and the Form B Continuation Page)

    Enter these required numbers at the bottom of each page. Remember, each sheet is a page!

Form B - Occupational Therapy Analysis

Position Title ______________________________

Function: Patient/Client Service
Non-Patient Education
Administration
Research
Consultation
Other: ______________________________

Duty: ______________________________
____
____

Type of Duty: Independent __________ Sequential Step __________

Task #	Task Description	D	F	T

Estimated Worker Trait Requirements:

Interests 1 2 3 4 5 6 7 8 9 0
G.E.D. 1 2 3 4 5 6
S.V.P. 1 2 3 4 5 6 7 8 9
Aptitudes G __ V __ N __ S __ P __ Q __ K __ F __ M __ E __ C __

Temperament 1 2 3 4 5 6 7 8 9 0 X Y
Phys. Activity S L M H V 2 3 4 5 6
Environ. Cond. I O B 2 3 4 5 6 7

Facility # __________ Team # __________ Page # __________

Form B - Occupational Therapy Analysis
Continuation Page (Continued from Page # ____)

Task #	Task Description	D	P	T

Facility # ________ Team # ________ Page # ________

C. FORM C - OCCUPATIONAL THERAPY DUTY QUESTIONNAIRE

Note: One of these is to be completed for each duty immediately after the occupational analysis for the duty has been completed or during the time the duty is being recorded. It is suggested that the Occupational Therapist collect this information during and/or after the Occupational Analyst collects the task data.

1. Duty.

   Write the duty for which this questionnaire is being prepared.

2. List the titles of departmental personnel who perform this duty.

   These are the titles (from Form A) of individuals who are performing this duty.

3. Is direction or supervision ever given?

   Indicate yes or no.

4. To whom?

   Titles of individuals given the direction or supervision.

5. By whom?

   Titles of individuals who give the direction or supervision.

6. When?

   This is to be a statement of the circumstance under which the direction or supervision is given, e.g., during period when a new departmental clerk is learning procedures for filing patient records.

7. To what degree?

   This is the extent to which direction or supervision is given, e.g., general verbal directions, detailed instructions and demonstrations, etc.

8. How was this duty learned?

Two responses are needed for this question. For each title listed under question one indicate (1) the amount of time spent in learning this duty in the appropriate educational setting, and (2) the title(s) of the persons who learned the duty in this manner.

9. How many times must this duty be done before performance is adequate?

The individual being interviewed should consider one criterion in answering this question:
(1) How many times must this duty be done before the outcome is the same as the one that would have been obtained by a fully-trained individual?

10. Is there a regulation that specifies minimum qualifications for persons permitted to perform this duty?

Check yes or no, whichever is appropriate.

11. What are these qualifications?

State the education, experience, and licensure or certification requirements.

12. What is the source of this regulation?

Identify the individual or group that established this regulation.

13. How much time is normally required to perform this duty?

Indicate the number of hours, days, etc., needed. In addition to the numerical value, be sure to specify the unit of time being used. For example, the number four, by itself, does not tell whether this is hours, days, or weeks.

14. How often is it done?

Indicate the frequency as three times per month, etc. Be sure not to overlook duties such as annual reports, etc., that might be done only once a year.

Note: The time and frequency estimates will be used to calculate percent of time estimates which will play a significant role in future analysis of this data.

15. Definition of technical terms and/or special equipment.

As a general guideline, provide definitions for any terms that cannot be found in a non-medical dictionary. If the Occupational Analyst is not familiar with the term, this is probably a good indication that it should be defined.

16. Facility #, Team #, and Page #.

Follow the same procedure as that used for Forms A and B.

Form C - Occupational Therapy Duty Questionnaire

Duty: ______________________________

____

____

1. List the titles of departmental personnel who perform this duty:

____

____

2. Is direction or supervision ever given? Yes __ No __ If yes:

To whom? ______________________________
By whom? ______________________________
When? ______________________________
To what degree? ______________________________

3. How was this duty learned?

	[approx. time (in weeks)]	Title(s) of persons performing this duty
Formal academic education	____________	____________
Formal continuing education	____________	____________
On-the-job training	____________	____________

4. How many times must this duty be done on the job before performance is adequate? ______________________________

5. Is there a regulation that specifies minimum qualifications for persons permitted to perform this duty? Yes __ No __ If yes:

What are these qualifications? ______________________________
What is the source of this regulation (e.g., legal requirement, hospital policy, etc.)? ______________________________

6. How much time is normally required to perform this duty? ____________

7. How often is it done? ____________ (frequency) times per ____________ (day, week, month)

8. Definition of technical terms and/or special equipment (continue on reverse side if necessary.) ______________________________

____

____

Facility # ________ Team # ________ Page # ________

D. FORM D - OCCUPATIONAL THERAPY ANALYSIS REVIEW

Note: After the completed occupational analysis has been reviewed, corrected, and signed by the Department Head (see instruction #16 for Form A), it is also to be reviewed by at least three other individuals. The names of these three persons should be obtained from the Occupational Therapist(s) who provide the majority of the task analysis data.

Three criteria should be used in the selection of these additional reviewers:

a. Each reviewer should be an individual educated in some discipline other than Occupational Therapy.
b. He should have a comprehensive knowledge of the activities performed in Occupational Therapy. This means, therefore, that this person must work continuously and closely with the Occupational Therapy Department.
c. He should be an individual who has demonstrated the ability to provide objective and accurate evaluations of situations or procedures.

Thus, these three reviewers will probably have to be selected from individuals in positions such as the following: An administrative or medical supervisor of the Occupational Therapy function; a physical therapist, a nurse; a social worker; a psychologist; a home economist; a recreational therapist, etc.

A separate Form D is to be completed for each of these persons. Since these forms will be filled out after the task analysis has been typed, the original handwritten copies can be sent in with the remainder of the occupational analysis. Be sure, however, that they are legible.

Each selected reviewer is to provide the information for Form D in an individual interview session with one or both of the occupational analysis team members. The procedure to be followed in each interview is as follows:

a. Explain the general purpose of the project and the kinds of data that have been collected.
b. Explain why he is being asked to review these data.
    (1) To identify Occupational Therapy activities that overlap with those performed by health care personnel in other disciplines.
    (2) To identify problems due to overlapping activities.
    (3) To identify omissions.
c. Ask him to read a blank copy of Form D so he will know what specific information he is being asked to provide.

d. Ask him if he feels that he knows the Occupational Therapy operation well enough to furnish this information. If his response is "no", ask if he can suggest someone who can. If so, check with the Occupational Therapist to determine whether this is an acceptable alternative. If the reviewer cannot suggest an alternative, request the Occupational Therapist(s) to locate another reviewer.

e. After steps a through d have been completed, have the reviewer read the duty statements on the Form C's. In the event he needs clarification for a given duty, suggest that he read the task statements on the appropriate Form B. Follow the instructions below in completing Form D.

1. Are there any activities listed in this analysis that are also performed in other departments or by other professional groups?

After the reviewer has read each duty, ask this question. If his answer is "no", have him go on to the next duty. If the answer is "yes",

(1) place a check mark after "yes" and write a brief description of the activity in the first space,
(2) ask who else performs this activity and write in his response in the appropriate space,
(3) ask if this overlap is essential for interdisciplinary coordination of patient-care services and place a check by his answer,
(4) and ask question #2.

Note: Quite obviously, nothing is marked on Form D until the reviewer gives an affirmative response. If, after reading all the duties, he has not given a "yes" answer, question one is marked "no", question two is left blank, and the reviewer is asked question three. Whenever the reviewer answers "yes" to question one, question two must be asked.

2. Have any problems arisen concerning these overlapping activities?

a. If the reviewer responds "no" to this question, don't mark anything. Proceed immediately to the next duty.

b. If the reviewer responds "yes",
   (1) place a check after yes,
   (2) copy the activity from question one,
   (3) and ask him to describe the nature of the problem. Write his response in the appropriate space.

Note: If the reviewer has given all "no" responses to question two, the "no" space is marked after all duties have been surveyed.

3. Are there any activities you've seen performed by personnel in the Occupational Therapy Department that are not included in this analysis?

   a. Check the appropriate yes or no answer.
   b. If the answer is "yes", ask him to describe these activities and write his response in the appropriate space. Ask for his response to Form D - questions one and two for these additional activities.

Note: After question three has been completed, fill in the reviewer's name, title, department, and the date at the top of the form. Fill in the Facility, Team, and page numbers at the bottom.

Form D - Occupational Therapy Department Description

Reviewer ______________________________ ______________________
(name) (title)

______________________________ ______________________
(department) (date)

1. Are there any activities listed in this analysis that are also performed in other departments or by other professional groups? Yes __ No __
If yes, what are the activities? Who else performs then? Is this overlap essential for interdisciplinary coordination of patient-care services?

Activity:	Also performed by:	Essential Overlap?
____________	____________________	Yes __ No __
____________	____________________	Yes __ No __
____________	____________________	Yes __ No __
____________	____________________	Yes __ No __
____________	____________________	Yes __ No __

2. Have any problems arisen concerning these overlapping activities?
Yes __ No __ If yes, what is the activity and the nature of the problem?

Activity:	Nature of the problem:
____________	______________________________
____________	______________________________
____________	______________________________
____________	______________________________

3. Are there any activities you've seen performed by personnel in the Occupational Therapy Department that are not included in this analysis?
Yes __ No __

If yes, what are they? ______________________________

____

____

____

Facility # __________ Team # __________ Page # __________

PROCEDURES FOR SCHEDULING VISITS

In Exhibit A you will find the listing for your state of your team members, team number, and health facilities to be visited in your state.

Each of these facilities has agreed to participate in an occupational analysis and should return to the Occupational Therapist team member a questionnaire with all pertinent information. The letter should be waiting there when you return. If it is not, please telephone the supervising Occupational Therapist, Registered at the facility anyhow, and establish visiting dates over the phone. If the form has arrived, please call to acknowledge and schedule dates.

Each team will be responsible for scheduling their visits. Since locations, personal schedules, and facilities vary so widely, it is impossible to schedule them from the Columbus grant office.

The Occupational Therapist, Registered team member should consult with the Occupational Analyst to determine best dates for visiting and for writing reports. It may be necessary to use long-distance phone calls for this purpose. The Occupational Therapist, Registered should then call the supervising Occupational Therapist, Registered in each facility, establish visiting dates, and notify the Occupational Analyst. The visits and reports must be completed and returned to the Columbus office no later than December 31, 1970. You are strongly urged to complete your visits no later than December 18, as Christmas activities do not reflect the usual work patterns of most Occupational Therapy departments.

Scheduling may be difficult. Feel free to use the phone and place long-distance phone calls if necessary. (Instructions for telephone calls are listed under "Procedures for Communications" in this handbook.)

When the visit schedule is completed, please complete and return the attached form to this office, no later than November 27, 1970.

OCCUPATIONAL THERAPY ANALYSIS VISIT SCHEDULE

Team # ________ State ______________________

O.T.R. ______________________________________

O.A. ______________________________________

	Facility Name	Dates of Visit
1.		
2.		
3.		
4.		

Comments ______________________________________

____

____

____

PROCEDURES FOR TYPING SERVICES

After completing the first day or two of interview and observation, it will be necessary to write the report and have it typed on the forms before reviewing it with the facility staff. It will probably be necessary to arrange for payment of these services. It is only necessary, however, to have the preliminary report typed. Corrections and revisions can be made by hand and sent to us for final typing.

We are asking that each team make arrangements for typing services. Following are some suggestions:

1. Typing done in health facility by their staff and bill sent directly to OSU Columbus grant office.
2. Typing done in Occupational Analyst's office, bill sent to Columbus grant office.
3. Typing done by a typing service, bill sent to Columbus grant office.
4. Typing done by person from secretarial services (i.e., Kelly Girl, etc.) and bill remitted to Columbus grant office. (In this case, typewriter must be made available.)

It does not matter how the typing is done, nor by whom. However, each bill should be on some sort of letterhead stationery with the name of the agency doing the typing, the dates, the amount of service, and the name of the typist. Each bill must be counter-signed by a team member. Prices for these services vary from place to place. **A maximum should be:** $3.50 per hour or up to $.50 per page and $.10 per carbon. Please try to get the best rate for the service with as much convenience for the team as possible. It is not necessary, but the attached sheets may be used for your, and the typist's, convenience.

SAMPLE INVOICE FOR TYPING SERVICES

Name and address of agency providing services:

____

____

____

____

Name of typist: ______________________________

Date(s): ____________________________________

Please fill in one: _____ pages @ $_____ per page TOTAL $__________

_____ hours @ $_____ per hour TOTAL $__________

Payment to be remitted to:

____

____

____

____

Authorized for payment by: ______________________________
(team member)

Authorized for payment by: ______________________________
(R. Hartsook, Project Administrator)

Please remit to: Mrs. L. Jones
B-216 Starling-Loving Building
University Hospitals
410 West 10th Avenue
Columbus, Ohio 43210

PROCEDURES FOR SUBMITTING OCCUPATIONAL ANALYSIS FORMS

The forms should be used as worksheets as instructed in the "Procedures for Data Collection" in this handbook.

The preliminary report should then be typed as instructed in "Procedures for Typing Services" in this handbook.

Revisions to the preliminary report can then be handwritten on the report. The revised report should be placed in the envelope provided to you in your portfolio and sent to the Columbus grant office.

All reports are due in the Columbus grant office no later than December 31, 1970.

PROCEDURES FOR EXPENSE SHEET

I. SUMMARY OF TRAVEL REGULATIONS

A. Transportation

1. Commercial. (Item I) Use airline coach unless not available at the time of your required travel. Explain any deviation from coach fare. Receipts or ticket stubs, showing amounts paid, must be retained and attached to the travel voucher.

2. Personal Automobile. (Item II) Travel by personal automobile will be reimbursed at $.10 per mile. The maximum reimbursement for trips in excess of 500 miles round trip will be the round-trip coach airline fare, unless travel by personal automobile is specifically authorized by the Project Staff. Be sure that reasons are furnished with the original submission of the travel request.

B. Local Travel Expenses (Item III)

All local travel costs such as parking, tolls, taxis, buses, etc., may be claimed without receipt up to $10.00 per trip. For such expenses in excess of $10.00, receipts must be attached.

C. Subsistence (Food & Lodging) Expenses

1. Per diem allowance during the period of travel will be a maximum of $4.00 per quarterday. Receipts not required for food and lodging.

2. Actual expense allowance. (Items IV-V) If actual food and lodging expenses are in excess of the allowance in C.1. above, you may claim actual expenses, limited to $7.50 per quarter-day, by:

   a. Submitting receipts for lodging.
   b. Submitting receipts with an itemized list of meal costs.

D. Other Expenses

1. Other expenses such as baggage handling, telephone calls, telegrams, etc., may be claimed. Extradordinary expenses must be covered by receipts.

2. Telephone: See "Procedures for Communication" following this.

Note: Normally vouchers received by the grant office by Tuesday noon will be paid on the following Wednesday of the next week.

II. PROCEDURES FOR COMMUNICATIONS

Mail: (Item V)

Whenever possible, it is, of course, preferable to communicate by mail. You will be given a supply of stamped, addressed envelopes. These should serve most of your needs. However, should you need to send additional mail, please purchase postage, note it in special expenses on the expense sheet. You will be reimbursed.

Telephone: (Item VII)

When time prohibits mail communications, telephone charges may be made in the following way:

1. When telephoning the Columbus grant office, ask the operator to place a person-to-person or station-to-station long-distance call to the person desired, as listed on page of this handbook.

2. When telephoning your team partner or a facility:

   a. Ask the operator to charge the call to the special billing code number you have been given.
   b. Ask the operator for time and charges.
   c. Place the call person-to-person or station-to-station (if you will reach the desired person immediately).
   d. The operator will give you time and charges.
   e. Record the call on your Expense Sheet.
   f. Return the Expense Sheet to the Columbus grant office to receive payment.

Occupational Therapy Analysis

Expense Sheet

Occupational Analysis Teams
Team # ________ Team Member ______________________

I. Commercial Travel (Plane, Bus, Etc.):

Date	Type	From	To	Cost

II. Mileage:

Date	From	To	Total Miles
		Total	

III. Local Travel (Taxi, Bus, Limousine):

Date	From	To	Cost

IV. Lodging:

Date(s)	Town/City & State	Name Motel/Hotel	Cost

V. Special Expense (i.e., Parking, Locker, etc.):

Date	Reason	Place	Cost

VI. Food Costs

Date	Breakfast	Lunch	Dinner	Total for Day

VII. Telephone

Date	From	To	Cost

PROCEDURES FOR CONSULTANT REIMBURSEMENT

HEW, PHS policy prohibits the payment of consultant's fees to the Occupational Analyst members of the teams, but the Occupational Therapist members are working their own time and will be reimbursed for each 8-hour working day. In order to be reimbursed by the end of the month, appointment forms and consultant fee vouchers must be in the Columbus grant office no later than the first working day of the month.

All Occupational Therapist, Registered team members should fill in the attached forms by the 20th of the month in order to be reimbursed by the end of the following month.

OCCUPATIONAL THERAPIST, REGISTERED CONSULTANT ACTIVITIES REPORT

	Date	Place	Activities	# Hours
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				

EXHIBIT A

TEAM AND FACILITY INFORMATION

State:	Team Number:

Occupational Analyst: Address(s)	Telephone Number(s)

Occupational Therapist: Address(s)	Telephone Number(s)

Facilities:

Number Name	Address	Contact and Phone Number

EXHIBIT B

DEFINITIONS: TYPES OF OCCUPATIONAL THERAPY SERVICES AND QUALIFICATIONS FOR PRACTICE

1. Types of Service

   a. Acute/Restorative:

      (1) Acute: This is a service which is given to alleviate a temporary loss of function. The period in time is relatively short. Examples might be:

         (a) A splint to temporarily restore function to or protect an extremity.
         (b) Activities to provide psychosocial support and physical activity to those who will eventually regain normal function.

      (2) Restorative: This is a service provided to regain as much loss function as possible, either psychosocial or physical. Examples:

         (a) The stroke patient who is evaluated for self-care skills, is then trained to care for himself, and is discharged when he appears to have reached his current maximum potential.
         (b) The depressed patient who is evaluated for her ability to make decisions, interact with people, value herself, is given activities to develop these skills and attitudes, then is discharged when current estimated potential is reached.

      Both of the above services have a definite beginning and end point, beginning at the outset of an illness or a problem created by an illness and ending when the illness is cured or the problem is solved as much as currently possible. Goals are set, when the goals are reached, the service is ended.

   b. Preventive: This is a service provided to those with no apparent loss of function, but who show this potential. The beginning and end point are less definite. Examples might be: Activities programs for non-handicapped aging people, programs for disadvantaged children and youth, parent training for mentally retarded children.

   c. Maintenance: This is a service to prevent further deterioration provided to those who have a loss of function, but who have reached current maximum restorative potential. Examples might be: sheltered workshop setting for unemployables, nursing home activities programs for handicapped aging people.

2. Registration, Certification, Licensure

a. Registration: Is conferred by the American Occupational Therapy Association upon successful completion of a four-year accredited occupational therapy curriculum, a minimum of six-months clinical affiliation (internship) and a registration examination. To maintain registration, the individual must continue to pay annual registration and membership fees to the American Occupational Therapy Association.

b. Certification: Is conferred by the American Occupational Therapy Association upon successful completion of a six to eighteen month approved occupational therapy assistants' curriculum with a minimum of three months practical experience. As yet, there is no certification examination, but one will be instituted in 1971 or 1972. To remain certified, the individual must continue to pay annual certification and membership fees to the American Occupational Therapy Association.

The above two classifications are registered trademarks of The American Occupational Therapy Association. These classifications may or may not be mandatory by state civil service requirements.

c. Licensure: Is a requirement set up by state law, county or city ordinance. Requirements differ from place to place. They may or may not equate with AOTA registration or certification requirements. Licensure for occupational therapy is not required in most states.

EXHIBIT C

DESCRIPTION OF STRUCTURE TO BE USED IN OCCUPATIONAL THERAPY ANALYSIS

For purposes of this study, we are defining all the activities performed in Occupational Therapy as a distinct job within the total operation of the health-care delivery system.

There are two aspects of this statement that should be emphasized:

1. We used the phrase ". . .all the activities. . ." Thus, we are focusing not only on patient-care, but rather on everything done under the heading of Occupational Therapy. In other words, we are trying to define Occupational Therapy's domain in the health-care delivery system.
2. We said ". . .performed in Occupational Therapy. . ." and not ". . .performed by Occupational Therapist. . ." Again, we are defining the job of Occupational Therapy - not Occupational Therapist. In essence, we should try to identify all activities assigned to Occupational Therapy irrespective of who performs them.

To organize and standardize our data collection, we are subdividing job into three levels: Task, Duty, and Function. Each level is defined below.

Task

A task is the most basic level of worker activity and consists of two components: An output and an input. These are defined as follows:

Output - States what is accomplished. This is an observable change (or maintenance of status quo) in the environment. It must always be a direct result of human effort; thus, it can include a man-machine or a man-man interaction, but never a machine-machine interaction.

Input - States how output is normally accomplished. This is the necessary physical or mental worker effort required for the occurrence of the output. When the same output can be accomplished in two or more ways, each alternate input is stated along with the condition or conditions that necessitate or encourage the choice of that particular alternative.

A typical example of a task statement might be, "Records task by writing task statement on occupational analysis sheet".

In summary, a task is an event consisting of a simple outcome and the worker act that produces it. One assumption that seems to underly all occupational analyses is that jobs rarely if ever consist of related tasks. Hence, a task is viewed as a sequential step in a process leading to the accomplishment of a complex objective or goal. In this study, the term duty is being used to label an outcome that consists of two or more tasks and is described below.

Duty

A duty is an end product or outcome of a process consisting of an ordered sequence of two or more tasks. Structurally, the definition of a duty shall consist of two components:

1. A Lead Statement which Provides an Overall Description of the Duty. This lead statement is to be made up of three parts:

    a. A generalized, summary statement of the overall outcome. This is equivalent to the what portion in the definition of a task.

    b. A generalized, summary statement of the worker activities required to accomplish the duty. This can be compared to the how part of a task definition.

    c. A brief statement of the reason or purpose for this duty. A why component furnishes a justification for the existence of the duty.

2. A Listing of the Tasks Required for Accomplishment of the Duty. Each task included in this listing must satisfy two criteria. First, it must be a necessary condition for the accomplishment of the duty. Second, it must be listed in the chronological order in which it occurs. Moreover, the overall listing of tasks must satisfy two criteria. First, the listing must be exhaustive, i.e., it must include all of the worker tasks necessary for accomplishing the duty. Second, these tasks must be placed in proper sequence in all instances in which the completion of one task is necessary for the accomplishment of a subsequent one.

There are two comments concerning the nature of a duty that should be emphasized. First there is no requirement that all of the tasks be performed by the same person. For example, some of the tasks may be done by a Physician and the remainder by an Occupational Therapist. Second the duty may be an independent process (i.e., training clerical personnel assigned to the Occupational Therapy department), or it may be a sequential step in a larger process. For example, evaluation of the patient may be considered as the second step in the total process of Patient/Client Care. These larger processes that are made up of two or more duties are termed functions. They are the largest and most complex units in our Occupational Therapy occupational analysis structure.

Function

A function is an end product or outcome made up of two or more duties. Like the duty, it starts with a lead statement containing three components (What, How, and Why).

The same general principles used in the organization and definition of a duty will be followed in establishing the structure of a function, i.e., all duties necessary for the accomplishment of a function must be stated. A function can consist entirely of duties that are independent *or* entirely of duties that are a sequence of related steps *or* some combination of both. If the duties are independent, they need not be listed in a specific order. If, on the other hand, they fall into a sequence, they must be included in the order of their occurrence. Because of the broad scope of a function, it is presumed to be highly unlikely that all of the duties and tasks subsumed under it will be performed by one individual.

Since a function is the largest process in our structure, it will, of necessity, be viewed as an independent component of the job of Occupational Therapy.

EXHIBIT D

SUGGESTED FUNCTIONS AND DUTIES OF OCCUPATIONAL THERAPY PRACTICE

Functions:

1. Patient/Client Service
2. Non-Patient Education
3. Administration
4. Research
5. Consultation

Suggested Duties:

1. Patient/Client Service

a. Entering patients into program: Referral method(s); processing of referrals; assignments and scheduling for evaluation.

b. Screening and/or evaluation: Screening method (Are patients screened out as well as in? How?); method to determine evaluation procedures; list of evaluation procedures and tasks involved; evaluation instruments, machines, or materials used; reporting procedures.

c. Treatment planning: Methods of using evaluation results in treatment planning; methods of including patients, family, and other hospital personnel; methods for determining priorities in treatment.

d. Treatment implementation and integration: Methods of assigning and scheduling treatment; lists of tasks necessary to complete each treatment modality or method; list of methods used in fabricating each adapted or assistive device or appliance; reporting and/or recording methods.

2. Non-Patient Education

a. What kinds of continuing education are used for the staff?

(1) Inservice: On-the-job, mentoring, etc.
(2) Clinical (refers to staff only): Are post-graduate specialty affiliations available or done in another hospital?

(3) Formal or planned programs: Does staff participate in formal conferences, workshops, advanced training courses?
(4) Interdepartmental consultation: Are general (not directly patient related) instructions or advice given to this department or staff by another department on an informal consultative bases? What types, and how is this done?

b. What kinds of educational operations are provided by the staff to others?

(1) Inservice education: i.e., to nursing, medical students, or Occupational Therapy staff.
(2) Clinical education: OT and OTA, recreation, etc. Students at various levels (not facility and staff members).
(3) Formal or planned programs: Plan and hold conferences, workshops, and/or advanced training course work.
(4) Interdepartmental consultation: Staff members provide informal, general information to all departments.

3. Administration

a. Policy development: What are the steps involved in implementing or changing policy, both inter-departmental or extradepartmental.

b. Planning and maintaining departmental function: Possible tasks might be scheduling work hours, setting up programs, setting up communication routes, etc.; statistical records.

c. Planning and maintaining facilities and supplies: Might include budget planning and requests, purchasing and ordering, requesting space, providing housekeeping service, etc.

d. Personnel Responsibilities:

(1) Recruitment: Steps, resources.
(2) Selection: Steps, communications.
(3) Supervision: Lines of communication and/or supervision; methods of crisis or problem solving, etc., with staff.
(4) Salary decisions: Steps involved, who and how, if this is a department function.
(5) Cost accounting.

4. Research

a. Patient studies: Tasks involved, methods, record keeping, reporting process.

b. Education: Agencies and people, relationships, role and steps involved; recording, reporting, and evaluation.

c. Administrative: Administrative structure of department. Same as above.

5. Consultation

Entry system, steps involved, communication lines, authority structure.

EXHIBIT E

EXPLANATION OF RELATIONSHIPS WITHIN DATA, PEOPLE, THINGS HIERARCHIES*

Much of the information in this edition of the Dictionary is based on the premise that every job requires a worker to function in relation to Data, People, and Things, in varying degrees. These relationships are identified and explained below. They appear in the form of three hierarchies arranged in each instance from the relatively simple to the complex in such a manner that each successive relationship includes those that are simpler and excludes the more complex.[1] The identifications attached to these relationships are referred to as worker functions, and provide standard terminology for use in summarizing exactly what a worker does on the job by means of one or more meaningful verbs.

A job's relationship to Data, People, and Things can be expressed in terms of the highest appropriate function in each hierarchy to which the worker has an occupationally significant relationship, and these functions taken together indicate the total level of complexity at which he must perform. The last three digits of the occupational code numbers in the Dictionary reflect significant relationships to Data, People, and Things, respectively.[2] These last three digits express a job's relationship to Data, People, and Things by identifying the highest appropriate function in each hierarchy to which the job requires the worker to have a significant relationship, as reflected by the following table:

DATA (4th digit)	PEOPLE (5th digit)	THINGS (6th digit)
0 Synthesizing	0 Mentoring	0 Setting-Up
1 Coordinating	1 Negotiating	1 Precision Working
2 Analyzing	2 Instructing	2 Operating-Controlling
3 Compiling	3 Supervising	3 Driving-Operating
4 Computing	4 Diverting	4 Manipulating
5 Copying	5 Persuading	5 Tending
6 Comparing	6 Speaking-Signaling	6 Feeding-Offbearing
7} 8} No significant relationship	7 Serving	7 Handling
	8 No significant relationship	8 No significant relationship

*Dictionary of Occupational Titles, Vol. II. (Washington, D.C.: U.S. Government Printing Office, 1965) pp 649-650.

DATA: Information, knowledge, and conceptions, related to data, people, or things, obtained by observation, investigation, interpretation, visualization, mental creation; incapable of being touched; written data take the form of numbers, words, symbols; other data are ideas, concepts, oral verbalization.

0 **Synthesizing:** Integrating analyses of data to discover facts and/or develop knowledge concepts or interpretations.

1 **Coordinating:** Determining time, place, and sequence of operations or action to be taken on the basis of analysis of data; executing determinations and/or reporting on events.

2 **Analyzing:** Examining and evaluating data. Presenting alternative actions in relation to the evaluation is frequently involved.

3 **Compiling:** Gathering, collating, or classifying information about data, people, or things. Reporting and/or carrying out a prescribed action in relation to the information is frequently involved.

4 **Computing:** Performing arithmetic operations and reporting on and/or carrying out a prescribed action in relation to them. Does not include counting.

5 **Copying:** Transcribing, entering, or posting data.

6 **Comparing:** Judging the readily observable functional, structural, or compositional characteristics (whether similar to or divergent from obvious standards) of data, people, or things.

PEOPLE: Human beings; also animals dealt with on an individual basis as if they were human.

0 **Mentoring:** Dealing with individuals in terms of their total personality in order to advise, counsel, and/or guide them with regard to problems that may be resolved by legal, scientific, clinical, spiritual, and/or other professional principles.

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[1] As each of the relationships to People represents a wide range of complexity, resulting in considerable overlap among occupations, their arrangement is somewhat arbitrary and can be considered a hierarchy only in the most general sense.

[2] Only those relationships which are occupationally significant in terms of the requirements of the job are reflected in the code numbers. The incidental relationships which every worker has to Data, People, and Things, but which do not seriously affect successful performance of the essential duties of the job, are not reflected.

1 **Negotiating:** Exchanging ideas, information, and opinions with others to formulate policies and programs and/or arrive jointly at decisions, conclusions, or solutions.

2 **Instructing:** Teaching subject matter to others, or training others (including animals) through explanation. demonstration, and supervised practice; or making recommendations on the basis of technical disciplines.

3 **Supervising:** Determining or interpreting work procedures for a group of workers, assigning specific duties to them, maintaining harmonious relations among them, and promoting efficiency.

4 **Diverting:** Amusing others.

5 **Persuading:** Influencing others in favor of a product, service, or point of view.

6 **Speaking-Signaling:** Talking with and/or signaling people to convey or exchange information. Includes giving assignments and/or directions to helpers or assistants.

7 **Serving:** Attending to the needs or requests of people or animals or the expressed or implicit wishes of people. Immediate response is involved.

THINGS: Inanimate objects as distinguished from human beings; substances or materials; machines, tools, equipment; products. A thing is tangible and has shape, form, and other physical characteristics.

0 **Setting Up:** Adjusting machines or equipment by replacing or altering tools, jigs, fixtures, and attachments to prepare them to perform their functions, change their performance, or restore their proper functioning if they break down. Workers who set up one or a number of machines for other workers or who set up and personally operate a variety of machines are included here.

1 **Precision Working:** Using body members and/or tools or work aids to work, move, guide, or place objects or materials in situations where ultimate responsibility for the attainment of standards occurs and selection of appropriate tools, objects, or materials, and the adjustment of the tool to the task require exercise of considerable judgment.

2 **Operating-Controlling:** Starting, stopping, controlling, and adjusting the progress of machines or equipment designed to fabricate and/or process objects or materials. Operating machines involves setting up the machine

and adjusting the machine or material as the work progresses. Controlling equipment involves observing gages, dials, etc., and turning valves and other devices to control such factors as temperature, pressure, flow of liquids, speed of pumps, and reactions of materials. Setup involves several variables and adjustment is more frequent than in tending.

3 **Driving-Operating:** Starting, stopping, and controlling the actions of machines or equipment for which a course must be steered, or which must be guided, in order to fabricate, process, and/or move things or people. Involves such activities as observing gages and dials; estimating distances and determining speed and direction of other objects; turning cranks and wheels; pushing clutches or brakes; and pushing or pulling gear lifts or levers. Includes such machines as cranes, conveyor systems, tractors, furnace charging machines, paving machines and hoisting machines. Excludes manually powered machines, such as handtrucks and dollies, and power assisted machines, such as electric wheelbarrows and handtrucks.

4 **Manipulating:** Using body members, tools, or special devices to work, move, guide, or place objects or materials. Involves some latitude for judgment with regard to precision attained and selecting appropriate tool, object, or material, although this is readily manifest.

5 **Tending:** Starting, stopping, and observing the functioning of machines and equipment. Involves adjusting materials or controls of the machine, such as changing guides, adjusting timers and temperature gages, turning valves to allow flow of materials, and flipping switches in response to lights. Little judgment is involved in making these adjustments.

6 **Feeding-Offbearing:** Inserting, throwing, dumping, or placing materials in or removing them from machines or equipment which are automatic or tended or operated by other workers.

7 **Handling:** Using body members, handtools, and/or special devices to work, move, or carry objects or materials. Involves little or no latitude for judgment with regard to attainment of standards or in selecting appropriate tool, object, or material.

NOTE: Included in the concept of Feeding-Offbearing, Tending, Operating-Controlling, and Setting Up, is the situation in which the worker is actually part of the setup of the machine, either as the holder and guider of the material or holder and guider of the tool.

EXHIBIT F

EXPLANATION OF WORKER TRAIT COMPONENTS*

Those abilities, personal traits, and individual characteristics required of a worker in order to achieve average successful job performance are referred to as worker traits. Occupational information presented in volumes I and II is based in part on analysis of required worker traits in terms of the six distinct worker trait components described in this appendix. These six components have been selected for this purpose because they provide the broadest and yet most comprehensive framework for the effective presentation of worker trait information. Within this framework the user will find data concerning the requirements of jobs for: (1) The amount of general educational development and specific vocational preparation a worker must have, (2) the specific capacities and abilities required of him in order to learn or perform certain tasks or duties, (3) preferences for certain types of work activities or experiences considered necessary for job success, (4) types of occupational situations to which an individual must adjust, (5) physical activities required in work situations, and (6) physical surroundings prevalent in jobs.

Information reflecting significant worker trait requirements is contained, explicitly or by implication, in the job definitions in volume I. In the Worker Traits Arrangement in volume II, the qualifications profile for each worker trait group shows the range of required traits and/or levels of traits for the first five of these components. Numbers or letters are used to identify each specific trait and level. In this appendix, these identifying numbers and letters appear in italics.

The worker trait components are:

I. Training time (general educational development, specific vocational preparation)
II. Aptitudes
III. Interests
IV. Temperaments
V. Physical demands
VI. Working conditions [1]

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[1] Working conditions were recorded as part of each job analysis, and are reflected, when appropriate, in job definitions in volume I. However, because they did not contribute to the homogeneity of worker trait groups, they do not appear as a component in the Worker Traits Arrangement.

*Dictionary of Occupational Titles, Vol. II. (Washington, D.C.: U.S. Government Printing Office, 1965) pp 651-656.

I. Training Time

The amount of general educational development and specific vocational preparation required for a worker to acquire the knowledge and abilities necessary for average performance in a particular job.

General Educational Development: This embraces those aspects of education (formal and informal) which contribute to the worker's (a) reasoning development and ability to follow instructions, and (b) acquisition of "tool" knowledges, such as language and mathematical skills. It is education of a general nature which does not have a recognized, fairly specific, occupational objective. Ordinarily such education is obtained in elementary school, high school, or college. It also derives from experience and individual study.

The following is a table explaining the various levels of general educational development.

GENERAL EDUCATIONAL DEVELOPMENT

Level	Reasoning Development	Mathematical Development	Language Development
6	Apply principles of logical or scientific thinking to a wide range of intellectual and practical problems. Deal with nonverbal symbolism (formulas, scientific equations, graphs, musical notes, etc.) in its most difficult phases. Deal with a variety of abstract and concrete variables. Apprehend the most abstruse classes of concepts.	Apply knowledge of advanced mathematical and statistical techniques such as differential and integral calculus, factor analysis, and probability determination, or work with a wide variety of theoretical mathematical concepts and make original applications of mathematical procedures, as in empirical and differential equations.	Comprehension and expression of a level to —Report, write, or edit articles for such publications as newspapers, magazines, and technical or scientific journals. Prepare and draw up deeds, leases, wills, mortgages, and contracts. —Prepare and deliver lectures on politics, economics, education, or science. —Interview, counsel, or advise such people as students, clients, or patients, in such matters as welfare eligibility, vocational rehabilitation, mental hygeine, or marital relations. —Evaluate engineering technical data to design buildings and bridges.
5	Apply principles of logical or scientific thinking to define problems, collect data, establish facts, and draw valid conclusions. Interpret an extensive variety of technical instructions, in books, manuals, and mathematical or diagrammatic form. Deal with several abstract and concrete variables.		

Level	Reasoning Development	Mathematical Development	Language Development
4	Apply principles of rational systems[1] to solve practical problems and deal with a variety of concrete variables in situations where only limited standardization exists. Interpret a variety of instructions furnished in written, oral, diagrammatic, or schedule form.	Perform ordinary arithmetic, algebraic, and geometric procedures in standard, practical applications.	Comprehension and expression of a level to —Transcribe dictation, make appointments for executive and handle his personal mail, interview and screen people wishing to speak to him, and write routine correspondence on own initiative. —Interview job applicants to determine work best suited for their abilities and experience, and contact employers to interest them in services of agency. —Interpret technical manuals as well as drawings and specifications, such as layouts, blueprints, and schematics.
3	Apply common sense understanding to carry out instructions furnished in written, oral, or diagrammatic form. Deal with problems involving several concrete variables in or from standardized situations.	Make arithmetic calculations involving fractions, decimals and percentages.	Comprehension and expression of a level to —File, post, and mail such material as forms, checks, receipts, and bills. —Copy data from one record to another, fill in report forms, and type all work from rough draft or corrected copy. —Interview members of household to obtain such information as age, occupation, and number of children, to be used as data for surveys, or economic studies. —Guide people on tours through historical or public buildings, describing such features as size, value, and points of interest.
2	Apply common sense understanding to carry out detailed but uninvolved written or oral instructions. Deal with problems involving a few concrete variables in or from standardized situations.	Use arithmetic to add, subtract, multiply, and divide whole numbers.	
1	Apply common sense understanding to carry out simple one- or two-step instructions. Deal with standardized situations with occasional or no variables in or from these situations encountered on the job.	Perform simple addition and subtraction, reading and copying of figures, or counting and recording.	Comprehension and expression of a level to —Learn job duties from oral instructions or demonstration. —Write identifying information, such as name and address of customer, weight, number, or type of product, on tags, or slips. —Request orally, or in writing, such supplies as linen, soap, or work materials.

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[1] Examples of "principles of rational systems" are: Bookkeeping, internal combustion engines, electric wiring systems, house building, nursing, farm management, ship sailing.

Specific Vocational Preparation: The amount of time required to learn the techniques, acquire information, and develop the facility needed for average performance in a specific job-worker situation. This training may be acquired in a school, work, military, instutitional, or avocational environment. It does not include orientation training required of even every fully qualified worker to become accustomed to the special conditions of any new job. Specific vocational training includes training given in any of the following circumstances:

a. Vocational education (such as high school commercial or shop training, technical school, art school, and that part of college training which is organized around a specific vocational objective);

b. Apprentice training (for apprenticeable jobs only);

c. In-plant training (given by an employer in the form of organized classroom study);

d. On-the-job training (serving as learner or trainee on the job under the instruction of a qualified worker);

e. Essential experience in other jobs (serving in less responsible jobs which lead to the higher grade job or serving in other jobs which qualify).

The following is an explanation of the various levels of specific vocational preparation.

Level	*Time*	*Level*	*Time*
1	**Short demonstration only.**	*5*	**Over 6 months up to and including 1 year.**
2	**Anything beyond short demonstration up and including 30 days.**	*6*	**Over 1 year up to and including 2 years.**
		7	**Over 2 years up to and including 4 years.**
3	**Over 30 days up to and including 3 months.**	*8*	**Over 4 years up to and including 10 years.**
4	**Over 3 months up to and including 6 months.**	*9*	**Over 10 years.**

II. APTITUDES

Specific capacities and abilities required of an individual in order to learn or perform adequately a task or job duty.

G INTELLIGENCE: General learning ability. The ability to "catch on" or understand instructions and underlying principles. Ability to reason and make judgments. Closely related to doing well in school.

V VERBAL: Ability to understand meanings of words and ideas associated with them, and to use them effectively. To comprehend language, to understand relationships between words, and to understand meanings of whole sentences and paragraphs. To present information or ideas clearly.

N NUMERICAL: Ability to perform arithmetic operations quickly and accurately.

S SPATIAL: Ability to comprehend forms in space and understand relationships of plane and solid objects. May be used in such tasks as blueprint reading and in solving geometry problems. Frequently described as the ability to "visualize" objects of two or three dimensions, or to think visually of geometric forms.

P FORM PERCEPTION: Ability to perceive pertinent detail in objects or in pictorial or graphic material; To make visual comparisons and discriminations and see slight differences in shapes and shadings of figures and widths and lengths of lines.

Q CLERICAL PERCEPTION: Ability to perceive pertinent detail in verbal or tabular material. To observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation.

K MOTOR COORDINATION: Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement response accurately and quickly.

F FINGER DEXTERITY: Ability to move the fingers and manipulate small objects with the fingers rapidly or accurately.

M MANAUL DEXTERITY: Ability to move the hands easily and skillfully. To work with the hands in placing and turning motions.

E EYE-HAND-FOOT COORDINATION: Ability to move the hand and foot coordinately with each other in accordance with visual stimuli.

C COLOR DISCRIMINATION: Ability to perceive or recognize similarities or differences in colors, or in shades or other values of the same color; to identify a particular color, or to recognize harmonious or contrasting color combinations, or to match colors accurately.

Explanation of Levels

The digits indicate how much of each aptitude the job requires for satisfactory (average) performance. The average requirements, rather than maximum or minimum, are cited. The amount required is expressed in terms of equivalent amounts possessed by segments of the general working population.

The following scale is used:

1 The top 10 percent of the population. This segment of the population possesses an extremely high degree of the aptitude.

2 The highest third exclusive of the top 10 percent of the population. This segment of the population possesses an above average or high degree of the aptitude.

3 The middle third of the population. This segment of the population possesses a medium degree of the aptitude, ranging from slightly below to slightly above average.

4 The lowest third exclusive of the bottom 10 percent of the population. This segment of the population possesses a below average or low degree of the aptitude.

5 The lowest 10 percent of the population. This segment of the population possesses a negligible degree of the aptitude.

Significant Aptitudes

Certain aptitudes appear in boldface type on the qualifications profiles for the worker trait groups. These aptitudes are considered to be occupationally significant for the specific group; i.e., essential for average successful job performance. All boldface aptitudes are not necessarily required of a worker for each individual job within a worker trait group, but some combination of them is essential in every case.

III. INTERESTS

Preferences for certain types of work activities or experiences, with accompanying rejection of contrary types of activities or experiences. Five pairs of interest factors are provided so that a positive preference for one factor of a pair also implies rejection of the other factor of that pair.

1	Situations involving a preference for activities dealing with things and objects.	vs.	*6*	Situations involving a preference for activities concerned with people and the communication of ideas.
2	Situations involving a preference for activities involving business contact with people.	vs.	*7*	Situations involving a preference for activities of a scientific and technical nature.
3	Situations involving a preference for activities of a routine, concrete, organized nature.	vs.	*8*	Situations involving a preference for activities of an abstract and creative nature.
4	Situations involving a preference for working for people for their presumed good, as in the social welfare sense, or for dealing with people and language in social situations.	vs.	*9*	Situations involving a preference for activities that are nonsocial in nature, and are carried on in relation to processes, machines, and techniques.
5	Situations involving a preference for activities resulting in prestige or the esteem of others.	vs.	*0*	Situations involving a preference for activities resulting in tangible, productive satisfaction.

IV. TEMPERAMENTS

Different types of occupational situations to which workers must adjust.

1 Situations involving a variety of duties often characterized by frequent change.

2 Situations involving repetitive or short cycle operations carried out according to set procedures or sequences.

3 Situations involving doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

4 Situations involving the direction, control, and planning of an entire activity or the activities of others.

5 Situations involving the necessity of dealing with people in actual job duties beyond giving and receiving instructions.

6 Situations involving working alone and apart in physical isolation from others, although the activity may be integrated with that of others.

7 Situations involving influencing people in their opinions, attitudes, or judgments about ideas or things.

8 Situations involving performing adequately under stress when confronted with the critical or unexpected or when taking risks.

9 Situations involving the evaluation (arriving at generalizations, judgments, or decisions) of information against sensory or judgmental criteria.

0 Situations involving the evaluation (arriving at generalizations, judgments, or decisions) of information against measurable or verifiable criteria.

X Situations involving the interpretation of feelings, ideas, or facts in terms of personal viewpoint.

Y Situations involving the precise attainment of set limits, tolerances, or standards.

V. PHYSICAL DEMANDS

Physical demands are those physical activities required of a worker in a job.

The physical demands referred to in this Dictionary serve as a means of expressing both the physical requirements of the job and the physical capacities (specific physical traits) a worker must have to meet the requirements. For example, "seeing" is the name of a physical demand required by many jobs (perceiving by the sense of vision), and also the name of a specific capacity possessed by many people (having the power of sight). The worker must possess physical capacities at least in an amount equal to the physical demands made by the job.

The Factors

1 **Lifting, Carrying, Pushing, and/or Pulling** (**Strength**). These are the primary "strength" physical requirements, and generally speaking, a person who engages in one of these activities can engage in all.
Specifically, each of these activities can be described as:

(1) Lifting: Raising or lowering an object from one level to another (includes upward pulling).
(2) Carrying: Transporting an object, usually holding it in the hands or arms or on the shoulder.
(3) Pushing: Exerting force upon an object so that the object moves away from the force (includes slapping, striking, kicking, and treadle actions).
(4) Pulling: Exerting force upon an object so that the object moves toward the force (includes jerking).

The five degrees of Physical Demands Factor No. 1 (Lifting, Carrying, Pushing, and/or Pulling), are as follows:

S Sedentary Work

Lifting 10 lbs. maximum and occasionally lifting and/or carrying such articles as dockets, ledgers, and small tools. Although a sedentary job is defined as one which involves sitting, a certain amount of walking and standing is often necessary in carrying out job duties. Jobs are sedentary if walking and standing are required only occasionally and other sedentary criteria are met.

L Light Work

Lifting 20 lbs. maximum with frequent lifting and/or carrying of objects weighing up to 10 lbs. Even though the weight lifted may be only a negligible amount, a job is in this category when it requires walking or standing to a significant degree, or when it involves sitting most of the time with a degree of pushing and pulling of arm and/or leg controls.

M Medium Work

Lifting 50 lbs. maximum with frequent lifting and/or carrying of objects weighing up to 25 lbs.

H Heavy Work

Lifting 100 lbs. maximum with frequent lifting and/or carrying of objects weighing up to 50 lbs.

V Very Heavy Work

Lifting objects in excess of 100 lbs. with frequent lifting and/or carrying of objects weighing 50 lbs. or more.

2 **Climbing and/or Balancing:**

(1) Climbing: Ascending or descending ladders, stairs, scaffolding, ramps, poles, ropes, and the like, using the feet and legs and/or hands and arms.
(2) Balancing: Maintaining body equilibrium to prevent falling when walking, standing, crouching, or running on narrow, slippery, or erratically moving surfaces; or maintaining body equilibrium when performing gymnastic feats.

3 **Stooping, Kneeling, Crouching, and/or Crawling:**

(1) Stooping: Bending the body downward and forward by bending the spine at the waist.
(2) Kneeling: Bending the legs at the knees to come to rest on the knee or knees.
(3) Crouching: Bending the body downward and forward by bending the legs and spine.
(4) Crawling: Moving about on the hands and knees or hands and feet.

4 **Reaching, Handling, Fingering, and/or Feeling:**

(1) Reaching: Extending the hands and arms in any direction.
(2) Handling: Seizing, holding, grasping, turning, or otherwise working with the hand or hands (fingering not involved).
(3) Fingering: Picking, pinching, or otherwise working with the fingers primarily (rather than with the whole hand or arm as in handling).
(4) Feeling: Perceiving such attributes of objects and materials as size, shape, temperature, or texture, by means of receptors in the skin, particularly those of the finger tips.

5 **Talking and/or Hearing:**

(1) Talking: Expressing or exchanging ideas by means of the spoken word.
(2) Hearing: Perceiving the nature of sounds by the ear.

6 Seeing:

Obtaining impressions through the eyes of the shape, size, distance, motion, color, or other characteristics of objects. The major visual functions are: (1) acuity, far and near, (2) depth perception, (3) field of vision, (4) accommodation, (5) color vision. The functions are defined as follows:

(1) Acuity, far—clarity of vision at 20 feet or more.
Acuity, near—clarity of vision at 20 inches or less.
(2) Depth perception--three dimensional vision. The ability to judge distance and space relationships so as to see objects where and as they actually are.
(3) Field of vision—the area that can be seen up and down or to the right or left while the eyes are fixed on a given point.
(4) Accommodation—adjustment of the lens of the eye to bring an object into sharp focus. This item is especially important when doing near-point work at varying distances from the eye.
(5) Color vision—the ability to identify and distinguish colors.

VI. WORKING CONDITIONS

Working conditions are the physical surroundings of a worker in a specific job.

1 Inside, Outside, or Both:

I Inside: Protection from weather conditions but not necessarily from temperature changes.
O Outside: No effective protection from weather.
B Both: Inside and outside.

A job is considered "inside" if the worker spends approximately 75 per cent or more of his time inside, and "outside" if he spends approximately 75 per cent or more of his time outside. A job is considered "both" if the activities occur inside or outside in approximately equal amounts.

2 Extremes of Cold Plus Temperature Changes:

(1) Extremes of Cold: Temperature sufficiently low to cause marked bodily discomfort unless the worker is provided with exceptional protection.
(2) Temperature Changes: Variations in temperature which are sufficiently marked and abrupt to cause noticeable bodily reactions.

3 Extremes of Heat Plus Temperature Changes:

(1) Extremes of Heat: Temperature sufficiently high to cause marked bodily discomfort unless the worker is provided with exceptional protection.
(2) Temperature Changes: Same as **2** (2).

4 Wet and Humid:

(1) Wet: Contact with water or other liquids.
(2) Humid: Atmospheric condition with moisture content sufficiently high to cause marked bodily discomfort.

5 Noise and Vibration:

Sufficient noise, either constant or intermittent, to cause marked distraction or possible injury to the sense of hearing and/or sufficient vibration (production of an oscillating movement or strain on the body or its extremities from repeated motion or shock) to cause bodily harm if endured day after day.

6 Hazards:

Situations in which the individual is exposed to the definite risk of bodily injury.

7 Fumes, Odors, Toxic Conditions, Dust, and Poor Ventilation:

(1) Fumes: Smoky or vaporous exhalations, usually odorous, thrown off as the result of combustion or chemical reaction.
(2) Odors: Noxious smells, either toxic or nontoxic.
(3) Toxic Conditions: Exposure to toxic dust, fumes, gases, vapors, mists, or liquids which cause general or localized disabling conditions as a result of inhalation or action on the skin.
(4) Dust: Air filled with small particles of any kind, such as textile dust, flour, wood, leather, feathers, etc., and inorganic dust, including silica and asbestos, which make the workplace unpleasant or are the source of occupational diseases.
(5) Poor Ventilation: Insufficient movement of air causing a feeling of suffocation; or exposure to drafts.

APPENDIX 3A

CRITERIA FOR SELECTING OCCUPATIONAL THERAPY FACILITIES

CRITERIA FOR SELECTING OCCUPATIONAL THERAPY FACILITIES

The data used to develop the position descriptions can be adequate if, and only if, it includes a precise definition of all the tasks being performed in the delivery of health care through Occupational Therapy. Thus, the selection of the facilities in which occupational analyses are to be conducted is a matter of prime importance. A classification procedure has been devised to identify 27 combinations of Patient/Situation characteristics which are to be used in the selection of these facilities. This is shown graphically in Figure 1 on page 140.

In the left-hand column, patients are classified into three age ranges: youth, adult, and aged. Age itself is a factor which must be taken into consideration in Occupational Therapy. Youth are in a developmental--educational--prevocational phase of life. The techniques an Occupational Therapist uses should function as a positive contribution to this process. With adults, developmental and educational demands are somewhat reduced; here, however, vocational needs are quite important. With the aged groups, primary emphasis falls upon theraputic activities which are mainly maintenance and supportive in nature. To achieve maximum effectiveness, therefore, Occupational Therapists will use different techniques with patients of different ages. Thus, to insure that the position descriptions are comprehensive, Occupational Therapists working with different age groups must be observed.

Across the top of this figure, types of patient problems have been grouped under three headings: Psychiatric, General Medical/Surgical, and Physical Dysfunctions. Again, there are specific techniques especially appropriate to each, and hence, therapists working with each type of patient problem need to be observed.

Under each type of dysfunction, there is a three-way breakdown of the environmental setting in which the Therapist must work: Community, general hospital, or a special or extended care facility. Here differences in patient needs will tend to determine the techniques used. Therapists working in these three settings must be observed in order that the full range of activities may be sampled.

Three additional criteria will be used in the selection of sites for the job analysis studies. First, in the selection of general hospitals, only those which include both in-patient and out-patient services will be considered.

Second, at least one site will be selected at which Occupational Therapists can be observed who are working with mentally retarded patients. Third, sites will be selected in states in which trained employment service Occupational Analysts are available. In addition, an effort will be made to select facilities in clusters of three located reasonably close to each other. This will be one to hold travel costs to a minimum.

FIGURE 1

	PSYCHIATRIC DYSFUNCTION			GENERAL MEDICAL/SURGICAL DYSFUNCTION			PHYSICAL DYSFUNCTION		
	COMMUNITY	UNIT OF GENERAL HOSPITAL	SPECIAL TREATMENT FACILITY	COMMUNITY	GENERAL HOSPITAL	EXTENDED CARE FACILITY	COMMUNITY	GENERAL HOSPITAL	SPECIAL TREATMENT FACILITY
YOUTH									
ADULT									
AGED									

APPENDIX 3B

SELECTED OCCUPATIONAL THERAPY FACILITIES AND SIGNIFICANT CHARACTERISTICS OF EACH

SELECTED OCCUPATIONAL THERAPY FACILITIES AND SIGNIFICANT CHARACTERISTICS OF EACH

		Psychosocial			Physical			
		A/R	P	M	A/R	P	M	Additional Considerations:
1.	Dodd Hall Rehabilitation Center Ohio State University Hospitals Columbus, Ohio 43210	X			X			university oriented teaching rehabilitation center;
2.	Neil Avenue School Columbus, Ohio 43202						X	school age children (PM testing and A.D.L. training);
3.	Curative Workshop of Milwaukee Milwaukee, Wisconsin 53233				X	?		OP adults; physical rehabilitation; home care;
4.	Milwaukee County Mental Health Center Milwaukee, Wisconsin 53229	X	X	X				very large occupational therapy department; community facilities; day care; large staff;
5.	Therapy Services, Inc. Milwaukee, Wisconsin 53218		X	X	X	X	X	private practice; consulting service; rehabilitation programs; nursing home activity programs;
6.	Goodwill Industries, Inc. Buffalo, New York 14203	X		X	X		X	prevocational evaluation and training day clients; extensive use of assistants;
7.	Veterans Administration Hospital Bronx, New York 10468							(time did not permit visiting this facility)
8.	Montefiore Hospital Bronx, New York 10469	X		X	X		X	all ages, large OT department; private 6 M & S;
9.	Memorial Hospital Sarasota, Florida 33579	X		X	X		X	all ages, private, 6 M & S acute;

Key: A/R = acute restorative care
P = preventive care
M = maintenance care

		Psychosocial			Physical			
		A/R	P	M	A/R	P	M	Additional Considerations:
10.	Saint Elizabeth's Hospital Tampa, Florida 33602				X			PNF with strokes, one-man department;
11.	Lakeland Manor Lakeland, Florida 33802	X		X				teens to adult, including geriatrics;
12.	N.W. Regional Rehabilitation Center Services for the Blind Seattle, Washington 98118		X		X			one-man department, adjustment problems, life management;
13.	Fircrest School Seattle, Washington	X		X				mental retardation, some pre-vocational training;
14.	Spastic Children's Clinic Seattle, Washington 98105				X	X	X	very young children, close work with family, each professional person is responsible for total care of assigned child, with consultancy from other professions;
15.	Mrs. Lawrence Barker Kovalenko Los Angeles, California 90024	X	X					private practice, counseling psychotherapy, one-to-one;
16.	Memorial Hospital of Long Beach Long Beach, California 90801	X			X			all ages, large OT department;
17.	West Side Therapy Miss Diane Cohen, O.T.R. Los Angeles, California 90049		X	X	X		X	private practice, geriatrics consultancy.

Key: A/R = acute restorative care
P = preventive care
M = maintenance care

APPENDIX 4

FORMAT - SCHEDULING CONFIRMATION LETTER

FORMAT - SCHEDULING CONFIRMATION LETTER

(Hospital Administrator)

Dear Sir:

The Ohio State University, School of Allied Medical Professions has recently received a grant from the Department of Health, Education, and Welfare, Public Health Service to study the practice of Occupational Therapy through a modified occupational analysis approach. Your health facility was chosen as a data sample by the Project Planning Advisory Committee because of its geographical location and the kind of client it serves.

The Occupational Therapy Department has agreed to participate in an occupational analysis sometime between November 23 and December 31, 1970. A two-member team (one Occupational Analyst and one Occupational Therapist) will visit the department, observe the tasks performed in the department, interview the therapists, assistants, aides, orderlies, and return the data collected to us to organize, review and categorize to develop itemized job descriptions at various levels of skill and knowledge. The analysts would take as little of staff time as possible. Their assignment is to see how Occupational Therapy normally functions, to obtain information about daily tasks.

A concurrent and similar letter to this was sent to the Occupational Therapy Supervisor.

In order to save your time, please find enclosed a questionnaire and addressed, stamped envelop. Please fill in the questionnaire and return it at your earliest convenience.

Sincerely,

Rosa M. Hartsook, O.T.R.
Project Administrator

RH:lj
Enc.

Attachment to Scheduling Confirmation Letter

If the above name, title, and address are incorrect, please correct.

Are there hospital policies about which the occupational analysis team should know when they are observing?

Yes No (circle)

If yes, what are they? ______________________________

____

____

____

Do you wish for us to send you the completed job description for occupational therapy?

Yes No (circle)

Would you, personally, be willing to review a checklist of worker characteristics compiled from this data and make written comments sometime during the occupational analysts' team's visit? (This would require about an hour of your time.)

Yes No (circle)

If your facility has a job description of occupational therapy personnel, would you please return a copy with this questionnaire? ________

Comments: ______________________________

____

Signature ______________________________

Title ______________________________

Thank you for your time and attention.

APPENDIX 5

FORMAT - LETTER REQUESTING FACILITY SUGGESTED DATES FOR OCCUPATIONAL ANALYSIS

FORMAT - LETTER REQUESTING FACILITY SUGGESTED DATES FOR OCCUPATIONAL ANALYSIS

(Chief, Occupational Therapy Department)

Dear Sir:

This is to confirm our recent telephone conversation.

The Ohio State University, School of Allied Medical Professions is currently engaged in a research project sponsored by the Department of Health, Education, and Welfare, Public Health Service. The immediate goal is to collect data concerning the practice of Occupational Therapy through an occupational analysis procedure in order to develop a set of job descriptions which provide an efficient and operationally feasible division of responsibility for the entire range of tasks performed in Occupational Therapy. From these job descriptions curricula guides will then be developed to meet training needs at various levels of skill and knowledge.

Your health facility has been selected by the Project Planning Advisory Committee to participate in the study.

A two-member team (one Occupational Therapist and one Occupational Analyst) will spend one to three days in the Occupational Therapy Department, observing, and discussing with the staff the functions of the Occupational Therapy Department. It would entail permitting team members to "float", to observe, or ask about all the tasks involved in providing services to patients such as: Patient/client services, education services, administrative duties, research or consultation functions. The team would need a person to guide them through the department, and about a total of four hours of your personal time to answer their questions.

Following is an approximate schedule:

Day One: Meet with supervising O.T.R., discuss departmental and facility staff and line of command. Then observe departmental function.

Day Two: (Depends upon size of facility and department.) Continue observation of function during part or all of day. This second day may or may not be necessary.

Day Three: Review final report with supervising O.T.R. Then separate interviews with at least three professional individuals who work closely with Occupational Therapy. Each interview should require about one hour. One of these people should have a supervisory capacity. These people interviewed could include: Administrator, physician, nurse, physical therapist, social worker, speech therapist, psychologist, home economist, vocational counselor, etc., whoever works closely with the Occupational Therapists.

These days will not be consecutive. The first and second (if necessary) day should follow closely upon each other. The third day must come after the team's report is organized and typed.

The analysis must take place sometime between November 20 and December 18, 1970. Would you please answer the attached questionnaire and return it in the enclosed envelope to the Occupational Therapist on your team on or before November 18, 1970?

We do hope you will be able to allow our team to analyze the Occupational Therapy Staff's activities. Your facility was selected because it meets the criteria of geography, type of patient, and environment set by the project proposal. However, if you are unable to participate, please so inform us by phone (reverse the charge) no later than November 20, 1970, so that we may contact another facility in the same geographical region which meets the criteria. The telephone number here is AC 614-422-2155. Home phone is 263-4195.

The name of the Occupational Therapist who will be assisting in the occupational analysis is:

Please contact her, or me, if you have questions.

We deeply appreciate your assistance in this matter. We shall, of course, give credit for your participation in our final report to the Department of Health, Education, and Welfare and shall make a copy of the composite job descriptions available to you if you wish.

Thank you for your time and attention.

Sincerely,

Rosa M. Hartsook, O.T.R.
Project Administrator

RH:lj
Enc.

Attachment to Letter Requesting Facility Suggested Dates for Occupational Analysis

If the above name, title, and address are incorrect, please correct.

What are the best dates for conducting the job analysis? (Two work days between November 20 and December 18, 1970.)

	Day 1	Day 2 (if necessary)	Day 3
1st Choice:			
2nd Choice:			
3rd Choice:			

Whom should we contact to make final arrangements?

Name: ____________________

Title: ____________________

Telephone number: ____________________

How does one get to your facility?
(Please give instructions for auto.)

When they have arrived at the facility, with whom should they check, to be directed to the department?

____

Which is your preference (Check one)
You will make arrangements for the team to interview the following three people: (All interviews to be on day three, if possible)

	Name	Title
1.		
2.		
3.		

Continuation Page of Attachment to Letter Requesting Facility Suggested Dates for Occupational Analysis

You prefer that the team make arrangements to interview the following three people:

	Name	Title	Telephone Number
1.			
2.			
3.			

Choice of dates: (all interviews to be on day three if possible)

1st ____________________

2nd ____________________

3rd ____________________

APPENDIX 6

EVALUATION OF OCCUPATIONAL THERAPY ANALYSIS DATA

EVALUATION OF OCCUPATIONAL THERAPY ANALYSIS DATA

In all of the task analyses conducted for this study, a total of two-hundred sixty-four duties were identified by the six Occupational Analyst-Occupational Therapist teams. A worker trait profile was provided for each duty. An analysis of GED, SVP and Aptitude ratings yields the following information:

Measure	Mean	Standard Deviation	Range
GED	4.5	0.9	1-6
SVP	6.0	1.7	1-8
Intelligence (G)	2.1	0.7	1-4
Verbal (V)	2.2	0.7	1-4
Numerical (N)	3.3	0.7	2-5
Spatial (S)	3.6	0.6	2-5
Form Perception (P)	3.7	0.6	2-5
Clerical Perception (Q)	3.3	0.7	2-5
Motor Coordination (K)	3.7	0.7	2-5
Finger Dexterity (F)	3.6	0.7	2-5
Manual Dexterity (M)	3.6	0.7	2-5
Eye-Hand-Foot Coordination (E)	4.6	0.5	3-5
Color Discrimination (C)	4.6	0.6	3-5

Overall, the mean GED and SVP levels appeared relatively high. Among the aptitudes, the mean ratings for Intelligence and Verbal were relatively high, while those for Eye-Hand-Foot Coordination and Color Discrimination tended to be low.

In looking at the intercorrelations among these variables, two rather interesting patterns emerged. The intercorrelations among GED, SVP, G and V tended to be high as were the ones among S, P, K, F and M. The correlations for these two groups are shown in Tables 1. and 2. below.

The negative correlation in Table 1. are due simply to a reversal in the scales of GED and SVP versus G and V.

These intercorrelations seem to indicate that the Occupational Analysts were seeing two major dimensions. The one reflected by Table 1. looks like a general educational-cognitive dimension while that in Table 2. appears to cover a perceptual-motor domain.

TABLE 1.

Intercorrelations Among GED, SVP, Intelligence (G) and Verbal Aptitudes (V)

N = 264	GED	SVP	G	V
GED	1.000	.680	-.641	-.665
SVP		1.000	-.734	-.727
G			1.000	.887
V				1.000

TABLE 2.

Intercorrelations Among Spatial Aptitude (S), Form Perception (P), Motor Coordination (K), Finger Dexterity (F) and Manual Dexterity (M)

N = 264	S	P	K	F	M
S	1.000	.724	.439	.585	.538
P		1.000	.590	.493	.408
K			1.000	.688	.589
F				1.000	.883
M					1.000

The percentage of duties for which each interest and temperament factor was checked is as follows:

Interest	% of Duties
1	10.2
2	31.1
3	12.5
4	57.6
5	19.3
6	61.0
7	26.5
8	11.0
9	2.7
0	2.3

Temperament	% of Duties
1	37.1
2	7.2
3	6.4
4	54.2
5	70.1
6	1.0
7	22.7
8	1.5
9	55.7
0	25.0
X	1.9
Y	5.7

In terms of physical demands, 92 percent of the duties were viewed as being sedentary or light, six percent as medium, and only two percent as heavy or very heavy.

Virtually all of the activities in Occupational Therapy were seen as being performed inside; only one and one-half percent of the duties involved working both inside and outside.

Each analysis team was requested to describe the tasks observed for each duty and assign worker function ratings to each. A total of 1458 tasks were reported. The mean, standard deviation and range for each worker function are:

Worker Function	Mean	Standard Deviation	Range
Data	2.5	1.5	0-8
People	5.1	2.7	0-8
Things	6.6	1.5	0-8

The intercorrelations among worker functions are shown in Table 3. below:

TABLE 3.

Intercorrelations Among Worker Functions

N = 1458	Data	People	Things
Data	1.000	.183	-.038
People		1.000	.132
Things			1.000

From an overall standpoint, the size of these correlations lead to the conclusion that the three-worker functions are largely independent in terms of the total activity of Occupational Therapy.

In the coding of the worker functions, some of the analysts utilized the procedure of circling significant functions while others did not. A total of 558 elements had one or more functions circled. Point-biserial correlations were computed between function level and significance (circled ratings = 1 and non-circled ratings = 0). These correlations for Data, People and Things, for this subset of 558 elements, are -.639, -.702, and -.545, respectively. The magnitude of these correlations indicate that the worker functions viewed as being significant tend also to be given higher ratings.

Thus far, the evaluation has focused upon the raw data obtained from all of the analyses. For purposes of job restructuring, however, this massive amount of information (264 duties and 1458 tasks) would be unmanagable; thus, a procedure was needed to reduce the data to workable proportions. To accomplish this, an Occupational Therapist grouped duty and task statements that were describing the same or similar activities. Careful attention was given to the context in which these activities were observed; however, worker function ratings did not logically coalesce into task statements: Statements with identical or similar ratings did not have identical or similar means. Statements with similar verbal contents displayed widely varying ratings. For example:

Statement	Rating		
	D.	P.	T.
1. Instructs parents in care and use of adaptive equipment.	7	6	7
2. Instructs family in the care, maintenance and use of equipment and facilities to be utilized in patient treatment in absence of O.T.R.	1	2	5

Statement	Rating D.	 P.	 T.
3. Instructs patient's family in use of activity or special equipment when needed at home.	2	2	7

The decision was made to group the statements on the basis of verbal content, to organize them in a logical (either sequential or functional) order of "duties" (major activity headings) with "tasks" (elements of each duty) grouped under them.

APPENDIX 7

COVER LETTER AND SAMPLE PAGE FROM COMPOSITE LIST RATING FORM

COVER LETTER AND SAMPLE PAGE FROM COMPOSITE LIST RATING FORM

Dear Expert:

Better late than never is a very old cliche, but I'm afraid it applies here. Our data were late in arrival, consequently this questionnaire is nearly a month later than we had originally estimated.

Enclosed is the Composite Task List. This is a composite activity description of Occupational Therapy services gathered from fifteen different health care establishments by trained Occupational Analyst-Occupational Therapist teams. No one O.T.R., C.O.T.A., Aide, or O.T. service does all of these, but we do need to discover if this list completely describes activities involved in most Occupational Therapy services.

Please read the directions below, review the list according to the directions, and return the list in the enclosed envelope no later than March 26, 1971. We must analyze your responses for input in our early April conference.

As you will notice, there are 47 major headings. Under those major headings are listed activities which describe the major headings. The language may seem awkward. In wording the statements, we tried to tell "what" was done, then use the word "by" and tell "how" it was done. Hence, you will find many prepositional phrases.

We ask that you review the list in the following way. The list is typed on white paper. Following the task list is a green "answer sheet" and a blue "answer sheet". On the green sheet are columns of numbers and letters, with a page number at the top of each column. Place the answer sheet under PAGE 1 of the Composite Task List so that the green column for PAGE 1 is showing on the left.

Please identify those items and only those items that should be removed from the list by:

1. Placing an X in appropriately numbered and lettered space if the activity should be removed because it is not, and should not be considered an assigned responsibility of an O.T. service.

2. Placing an 0 in the appropriately numbered and lettered space if the activity is being replaced by a different or more effective procedure.

Continue through the entire Composite Task List in the same manner, placing the green column marked PAGE 2 to the left of page 2., etc. We are assuming that those items not marked are acceptable as Occupational Therapy task descriptions.

When you have finished with the green answer sheet, turn to the blue answer sheet. On side one of the sheet is the title "SUGGESTED CHANGES IN THE COMPOSITE TASK LIST." List on the left numbers and letters of the tasks you marked with an 0. Then using the Composite Task List as a guide, change the wording in the Composite Task List to the way it should be. If you feel you cannot accurately describe the activity, please leave the description blank.

On side two of the blue answer sheet is the title "SUGGESTED ADDITIONS TO THE COMPOSITE TASK LIST." List here the activities which were not included in the list, but should have been.

When you have finished with the green and blue sheets, please put them in the enclosed self-addressed, stamped envelope and return them to me. You may keep the Composite Task List.

Thank you for your valuable help in this difficult task.

Sincerely,

Rosa M. Hartsook, O.T.R.
Project Administrator

Enclosures

RH:lj

SAMPLE PAGE - OCCUPATIONAL THERAPY COMPOSITE TASK LIST

1. Reviews known information about client by analyzing all referral information to determine suitability of available services to client need and to determine evaluation procedures needed.

   a) Reviews medical or establishment history and/or referral and/or information from other agencies by selecting and reading those parts pertinent to Occupational Therapy such as diagnosis, social history, course of disease, vital statistics, psychometric evaluation, medical orders, precautions, limitations, etc.
   b) Obtains information about individual clients such as nature of problem, overall goals, and extent of progress by attending staff conferences.
   c) Estimates whether or not patient will respond to O.T. services or if evaluation is warranted and determines feasibility of treatment or training by analyzing intake information and/or discussing client with referring physician.
   d) Obtains referral, if client problems are deemed suitable to Occupational Therapy services, by requesting referral from physician or other appropriate source.
   e) Arranges for initial interview and/or evaluation by scheduling client into service.

2. Conducts intake interview or observation by conversing with, and observing client and his family to determine suitability of available services to client needs and to determine evaluation procedures needed.

   a) Establishes rapport with client by discussing his problems, answering questions, and explaining in detail what the program will involve.
   b) Personally assesses client during interview by talking with him about his problems and goals, interests and hobbies, by observing and recording his responses and reactions.
   c) Arranges to visit and obtain intake information and observes client home situation by making appointment and traveling to client's home to conduct interview and/or complete application.
   d) Determines family background by conferring with the client's family.
   e) Assesses suitability of client to services or client's reactions by observing him in the treatment or training setting and judging performance capabilities and reporting this information.

3. Serves as Occupational Therapy service representative by participating in staff or admission committee meetings to determine client's suitability to available services.

   a) Assists in determining suitability of client to services, ascertains nature and extent of evaluation or treatment needed by discussing formally and informally with the staff on a group or one-to-one basis the client's diagnosis and nature of his problem.

SAMPLE PAGE - COMPOSITE TASK LIST ANSWER SHEET

PAGE 5

8.a) ____
b) ____
c) ____
d) ____
e) ____
f) ____
g) ____
h) ____
i) ____
9. ____
a) ____
b) ____
10. ____

PAGE 4

6.g) ____
7. ____
a) ____
b) ____
c) ____
d) ____
e) ____
f) ____
g) ____
h) ____
i) ____
j) ____
k) ____
q) ____
8. ____

PAGE 3

4.z) ____
5. ____
a) ____
b) ____
c) ____
d) ____
e) ____
f) ____
g) ____
h) ____
6.e) ____
f) ____

PAGE 2

4.c) ____
d) ____
e) ____
f) ____
g) ____
h) ____
i) ____
j) ____
k) ____
l) ____
m) ____
n) ____
o) ____
p) ____
w) ____
x) ____
y) ____

PAGE 1

1. ____
a) ____
b) ____
c) ____
d) ____
e) ____
2. ____
a) ____
b) ____
4. ____
a) ____
b) ____

EVALUATOR: ________________________

SAMPLE - SUGGESTED CHANGES IN COMPOSITE TASK LIST

Composite Task List Number and Letter Marked 0	Description of Activity to Replace the one Listed to the Left
______	______________________________ ______________________________ ______________________________ ______________________________ ______________________________
______	______________________________ ______________________________ ______________________________ ______________________________ ______________________________
______	______________________________ ______________________________ ______________________________ ______________________________ ______________________________

SAMPLE - SUGGESTED ADDITIONS TO COMPOSITE TASK LIST

1. ______________________________

____

____

____

____

2. ______________________________

____

____

____

____

3. ______________________________

____

____

____

____

APPENDIX 8

SAMPLE DUTY WORKSHEET USED IN JOB DESCRIPTION DEVELOPMENT CONFERENCE

SAMPLE DUTY WORKSHEET USED IN JOB DESCRIPTION DEVELOPMENT CONFERENCE

Training: 89
Cognitive: 104
Motor: 121

DUTY 1. Reviews known information about client by analyzing all referral information to determine suitability of available services to client need and to determine evaluation procedures needed. (1)

D	P	T		LEVEL (S) 1	2	3	4	5	6
119	94	87	Arranges for initial interview and/or evaluation by scheduling client into service. (1)						
110	85	87	Estimates whether or not O.T. evaluation is warranted for client by analyzing intake information and/or by discussing client with referring physician. (17)						
100	94	102	Obtains information about individual clients such as nature of problem, overall goals, and extent of progress by attending staff conferences. (1)						
100	77	87	Reviews medical or establishment history and/or referral and/or information from other agencies by selecting and reading those parts pertinent to Occupational Therapy such as diagnosis, social history, course of disease, vital statistics, psychometric evaluation, medical orders, precautions, limitations, etc. (2)						
91	85	87	Adds client to Occupational Therapy roster if appropriate either by identifying and scheduling client for Occupational Therapy or by obtaining referral from appropriate source, depending upon established policy. (7)						

APPENDIX 9

SURVEY RESULTS
QUESTIONNAIRE TO OCCUPATIONAL THERAPY EMPLOYERS

SURVEY RESULTS
QUESTIONNAIRE TO OCCUPATIONAL THERAPY EMPLOYERS

QUESTION #1: "WOULD THIS JOB DESCRIPTION BE USABLE IN THE NEXT FIVE YEARS?"

Responses:

Job Description	Yes	No	Partially
Level 6	48%	38%	14%
Level 5	67%	0	33%
Level 4	76%	0	24%
Level 3	86%	3%	11%

A questionnaire intended to assess the utility of these job descriptions was sent to 57 Occupational Therapy facilities, and the table above summarizes the 29 responses. Over two-thirds of these responses indicated that Levels 5, 4, and 3 would be usable in the next five years. The respondents who chose "partially" explained that these job descriptions included specific aspects of Occupational Therapy which were not applicable to their setting. The respondents indicated that Level 6 contained many duties which were not appropriate for their facility, but indicated the duties would be very important in a very large Occupational Therapy facility or to a facility closely affiliated with a university.

QUESTION #2: "IF THE JOB DESCRIPTION WOULD NOT BE FEASIBLE, WHY?"

Job Description Introduction	Plans, formulates and conducts Occupational Therapy programs and research projects in order to implement rehabilitation programs and to expand total knowledge of Occupational Therapy principles:
Level 6: Part 1	Formulates and develops research hypotheses by conferring with specialists, discussing research proposals possibilities and determining research design, method and means of investigation and evaluation. Composes research project proposal. Reviews related research data. Implements research project in ongoing treatment or educational program by coordinating research activities with other staff activities. Documents research problem and results by compiling and writing

summary of results of study including supportive data to confirm or deny hypothesis and evaluation of methodology.

RESPONSES: "Not a research hospital."

"Level 6 would not be usable in next five years for reasons unrelated to specific duties listed. Rehabilitation is limited in this area due to location and difficulty attracting specialists and therapists. For this reason a position like Level 6 is for all practical purposes, untenable."

"Not revenue producing - too costly - out of context with II, III, IV, and V which are chief level."

"Not a research institution."

"Our staff is small (20 OTR's and 2 Aides) and all are directly involved in patient contact. Due to budgetary deficiencies and a decrease in patient census, no increase in staff is anticipated in the immediate future. We are municipally supported and I do not foresee in our next five years an involvement in research at this level."

"In a general hospital setting where the emphasis is on direct patient care, it would not be feasible to employ an individual whose interest was only research oriented."

"The primary responsibility of our two registered therapists is the treatment of referred patients. Since it is a private hospital the interest and cooperation of medical and psychiatric staff is difficult to obtain."

"Hospital costs prevent us from investing in research of this type. Hopefully we can learn from research done by others."

"In a teaching institution such as ours, this will be a position in itself. The position suggested will be Research Coordinator. Requirements: a minimum of a Master's Degree. Add: Consultant to graduate students in occupational therapy doing pilot research studies within the Medical Center."

"Position is unfeasible in our 130 bed facility."

"Too sophisticated for the average community teaching hospital which aims mainly at "service". Must have an entire division devoted to occupational therapy as part of a larger rehabilitation center. Also, overlaps into areas of management."

"New department. Do not know how much research will be done."

"Structure of this agency does not permit in-depth research conducted by the Occupational Therapy Department. At some future time, and as indicated it may be required to assign an OT to the agency Research Department to participate as stated in Level 6. Although research is not the primary function of the OT Supervisor, the latter is expected to cooperate and participate in research projects as requested by the Research Department."

"Would be possible and preferable, but director of Occupational Therapy would have to be given jurisdiction over all OT research, which is not now the case."

6: Part II Plans and develops occupational therapy program or project proposals by compiling, evaluating and integrating data analysis about ongoing programs to implement and coordinate program or project.

RESPONSES: "The director of Occupational Therapy should perform and control all these duties, (II-V). However, he/she must be given more administrative control than now exists. If he/she is to be responsible for a large and important program and staff, the power must be there too."

6: Part III Formulates and coordinates occupational therapy policies and procedures and determines organizational structure by identifying program needs, applying for financial support and planning for required facilities, personnel and materials.

RESPONSES: "This is essentially the same as in Level 5."

"Add: The Chief Occupational Therapist directs and plans for effective and efficient utilization of personnel, fiscal and material resources of total occupational therapy service and training program. Directs all matters involving personnel management."

6: Part IV Formulates and coordinates continuing education programs by identifying program needs, planning program, applying for financial support, negotiating for required facilities and personnel and supervising program implementation.

RESPONSES:	"This falls within the realm of "instructor" position. Add: formulates and coordinates educational and clinical work experience programs in occupational therapy at the professional and technical levels during the pre-clinical, undergraduate and graduate stages, in cooperation with Occupational Therapy Schools approved by the American Occupational Therapy Association. May coordinate specific training program objectives through participation in statewide Occupational Therapy Schools and Clinical Council meetings as well as The American Occupational Therapy Association Educational Committees. Coordinates and supervises in-service training programs for physicians, staff, and other allied health professions."
	"This could be incorporated into Level 5."
6: Part V	Performs related duties: May submit reports of research methodology and results for publication or conferences by making application and writing article or paper. May promote services offered by occupational therapy consultant by writing letters and brochures or arranging conferences with consultee. Participates in continuing self education by attending conferences, seminars, and training sessions, by reading and studying materials related to work.
RESPONSES:	"The first sentence: 'May submit reports of research methodology . . .' is the responsibility of the Research Coordinator. The second sentence: 'May promote services offered by occupational therapy consultant . . .' may be done by an appropriate administrative staff member in occupational therapy. The last sentence: 'Participates in continuing self-education . . .' is a responsibility of all professional and technical staff members."
Job Description Introduction	Supervises, coordinates and implements activities of occupational therapy programs in hospitals, clients' homes and other settings, to habilitate or rehabilitate physically or psychosocially disabled clients:
Level 5 Part 1a.	Establishes goals, policies, standards and plan of service for occupational therapy unit. Formulates, integrates and implements occupational therapy policies, procedures, programs and organizational structure by identifying program needs, applying for funding or support, planning for required personnel, space and materials to provide for required needs within establishment or community. Organizes and directs services by applying occupational therapy and management principles, work experiences, staff communications and advisement or directions from administrative and medical personnel.
RESPONSES:	"Chief of OT Department responsibility."
	"Has management responsibilities which the average therapist would not be required to have."

"Do not apply for funding or support."

"If director had administrative control, then his/her assistant should share the load per Level 5 description."

5: Part lb. Plans, develops and implements specific occupational therapy program proposals or research projects by compiling, evaluating, analyzing, integrating and interpreting data on program and rehabilitation needs. Reviews budget and organizational limitations or problems to plan and implement program or project for establishment or consultee agency. Consults with community agencies (such as state mental health division, public schools and geriatric facilities) to propose programs in community day care facilities, to coordinate program, identify problems before client institutionalization is necessitated and to maintain post-institutionalized care for clients by advising agency representatives.

RESPONSES: "It is possible that our OT staff could get involved in community agencies on a consultancy basis, but it is unlikely in the near future as our minimum staff existence here is justified by the current needs of the military; if the military needs go down, our staff complement will be cut. It is feasible that an interested staff member could, however, pursue such additional responsibilities on an off-duty hours basis."

"This paragraph seems to be a job in itself rather than part of the Level 5 description."

"Chief of OT Department responsibility."

"Management responsibilities not inherent in the job of usual staff therapist."

"Hospital administrator and social worker, not therapists, deal with outside agencies."

5: Part lc. Develops programs to supervise and train clients on pre-vocational basis by planning and arranging evaluation and executing procedures that stimulate learning of skills, work tolerances, acceptable work habits and social skills to prepare clients for sheltered workshops or vocational training.

RESPONSES: "Staff level or supervisor?"

"The clinic is not set up for pre-vocational evaluation."

"A facility of this size would not have space or personnel to provide pre-vocational evaluation or training."

5: Part IIa. Screens and observes referred clients to ascertain suitability for intake and treatment by personal client interview and conferences with other involved parties or referral sources. Evaluates client by reviewing intake data, administering and interpreting tests and by observing, analyzing and recording behavior to determine client's abilities or function in order to plan treatment goals and program details and assist in diagnostic procedures. Schedules clients and assigns cases to staff.

RESPONSES: "'Evaluates . . . details.' These duties should be delegated to Level 4 therapist because he is the primary OT treating the client. Level 5 therapist should not schedule clients because a Level 4 therapist is more aware of the client's itinery as well as his own."

"The psychiatrists interview and screen patients."

"Staff level, except for last sentence, which is chief or supervisory level."

"The sentence: 'Evaluates client by reviewing intake data . . .' describes staff therapist's responsibilities. The remaining paragraph falls within the supervisory area of the senior therapist."

"Usually handled by supervisor or department head."

"Patients are evaluated by physicians and assigned to therapeutic departments by physicians."

5: Part IIb. Supervises treatment of client by conferring with client, physicians, staff or specialists to adapt treatment techniques required by individual situation in order to promote psychosocial function, physical function, developmental, perceptual, cognitive, and motor abilities; adjustment to disability and community orientation. Analyzes data about client to determine and implement therapeutic motor activities that promote or conserve optimal physical function (such as upper extremity prosthetic and orthotic training) within client disability limits by selecting, evaluating and directing activities that provide appropriate strength, endurance, coordination, range of and resistance to motion. Guides behavior of clients demonstrating psychosocial dysfunction by designing opportunities for drive sublimation, facilitating inter-personal social group sessions, arranging task or work-oriented group activities and instructing client to cope with future environment through providing practice with and discussion of application of needed skills according to goals.

RESPONSES: "Staff level."

"Too involved with patient to carry director's responsibility."

"At Level 5 it would be more advantageous and effective for the OT to deal with administrative work and supervision of staff therapists, which would enable him to be more objective in dealing with client."

"This mainly describes the responsibilities of a staff therapist. Add: Gives direct supervision to Certified Occupational Therapy Assistants for specific therapeutic program involving improvement of specific pathology."

5: Part IIc. Documents evaluation, implementation and integration of treatment or training plan and client progress by analyzing, summarizing and preparing written reports and verbally reporting to authorities to promote communication, evaluate progress, maintain legal and financial records and coordinate client services. Attends case conferences with physicians and other specialists to discuss and evaluate client's function, progress and plan for therapy.

RESPONSES: "Staff level."

"This paragraph describes the responsibilities of a staff therapist."

". . . he should document and approve all written reports and treatment or training plans."

"Not in director's jurisdiction unless performing IIa and IIb."

5: Part IId. Formulates discharge plans to ready client and family for non-establishment care and to provide for continuation of treatment goals by discussing plans with client, instructing relatives, recording progress and recommendations.

RESPONSES: "Screening and evaluation should not be individual."

"Level 4 therapist should do this."

"This policy is rendered by the referring physician."

"This paragraph describes the responsibilities of a staff therapist."

5: Part III Coordinates services by recruiting, selecting, orienting, training, evaluating, or dismissing, when necessary, occupational therapy employees, students, and volunteers to meet requirements of client population and establishment. Plans, organizes, coordinates and directs in-service education and clinical training programs for establishment staff, students, and volunteers by analyzing training needs, formulating educational objectives, determining teaching methods, implementing educational programs and evaluating staff to satisfy all requirements set by professional association and educational institution.

RESPONSES: "Chief level."

"The first sentence is divided into several areas of responsibility. The chief occupational therapist is responsible for recruiting, selecting, and dismissal of employees. The instructor is responsible for coordination of student program and dismissal of students. The head occupational therapist is responsible for volunteers within their respective units. The senior therapist orients and trains in specific treatment techniques and evaluates performance of staff supervised with head, instructor, and chief occupational therapists. The remaining paragraph describes the responsibility of the instructor."

5: Part IV Performs related duties: Plans and coordinates purchasing of required equipment, materials and supplies for planned program needs by reviewing and authorizing purchase requests and by projecting or budgeting future demands of programs. May coordinate data collection and review data surveys concerning health care and services within community to determine extent of consultee service needs by surveying and conferring with health professionals and community organization representatives. Receives instruction in order to maintain and improve skills and knowledges by participating in in-service or continuing education, by reading and reviewing materials related to work. Organizes and participates in local, state or national conferences by planning workshops, arranging for expert's participation and leading demonstrations and talks to train health related personnel under program of continuing education.

RESPONSES: "Staff level"

"The first and second sentences describe the responsibilities of the head occupational therapist who may also supervise two or more specialized units of a large occupational therapy program. The remaining paragraph describes the responsibility of all professional staff members."

Job Description Introduction Organizes and implements occupational therapy activities in hospital, client's home or other setting to habilitate or rehabilitate physically or psychosocially disabled clients:

Level 4: Part I — Plans occupational therapy activities designed to assist individual client regain or maintain physical or psychosocial functioning and to assist client adjustment to handicaps. Treats or trains client according to established goals by applying and adapting plan and modifying activity to meet specific client situations to obtain therapy goals. Confers with staff for guidance and aid to discuss and evaluate client's function, progress and plan for therapy. Schedules and coordinates client treatment or training by reviewing availability of client, staff and facilities, and by verifying treatment or training workability with both client and staff. Tests client's abilities by conducting assigned standard tests or evaluations and by recording results in order to convey information for evaluation purposes.

RESPONSES: "Worded first two sentences at staff level - last three as COTA."

"The last sentence: 'Test client's abilities by conducting assigned standard tests . . .' Our staff therapist has the competence to decide which standard tests and evaluations to use, thus, the word 'assigned' is not appropriate here."

4: Part IIa. Plans and implements arts and crafts activities to meet client's activity needs, interests and skills by providing various craft media in variety of settings, such as health care facilities, day care centers, sheltered workshops and client's home. Trains client on prevocational basis by evaluating work potential (that is, acceptable work habits, work skills and tolerance levels), teaching skills and supervising practice to enhance client employability in sheltered setting or to prepare for vocational training. Guides and encourages client to develop higher level of maturation by arranging activities typical of normal developmental continuum and by aiding behavioral modification.

RESPONSES: "Worded for staff level."

"The planning of the first and last sentences of this paragraph describes the responsibility of the staff therapist, who directly supervises the Certified Occupational Therapy Assistant to implement the activities."

"Only last sentence is pertinent with half-time staff."

4: Part IIb. Guides and modifies behavior of client demonstrating psychosocial dysfunction by participating in inter-personal social group sessions, providing task or work-oriented group activities and by suggesting client activities outside institutional setting. Guides client with development of perceptual recognition and discrimination by directing activities according to treatment plan, increasing difficulty of activity as dysfunction decreases. Reports client responses to supervisor. Implements and instructs client's therapeutic motor activities by planning routine progression, and by leading and demonstrating activities, including body movements, to promote optimal physical function within disability limits.

RESPONSES: "Does not specify how treatment plan was developed as in IIa of Level 5 or IIb, c, and d."

"First half of paragraph pertinent only."

"This hospital does not treat patients with psychosocial problems - no plans to do so."

4: Part IIc. Selects, makes, and provides client with self-help devices and fabricates splints. Modifies, adjusts, and fabricates body supports or controls. Examines and tests prosthetic device by conducting check-outs and by conferring with prosthetist. Trains client in use of device by presenting problem-solving situations that will later be utilized in daily life.

Instructs client in methods of self-care, housekeeping and child-care tasks by demonstrating such tasks as grooming, feeding, dressing, cooking or cleaning, using principles of work simplification, substitute motions and assistive devices. Implements and coordinates recreational activities, and client services to community. Coordinates overall group direction for clients' community service by suggesting client service projects. Suggests special services for home-bound clients by exchanging information with social service staff or volunteer service to arrange for them to provide service (such as reading to blind, shopping and tutoring).

RESPONSES: "Last two sentences not pertinent".

"The clinic is not set up with homemaking devices."

"Staff - 'selects', 'examines', 'tests'."

4: Part III Documents evaluation, implementation and integration of treatment or training and client progress by writing and distributing reports or by reporting verbally to promote communication, to evaluate progress, to maintain legal and financial records. Informs and confers with client's relatives or health care workers in home or establishment by writing periodic reports, by demonstrating methods and use of equipment, and by discussing client's capabilities and problems. Recommends termination of formal services by recording progress and future recommendations in client's record. Readies client for discharge by implementing discharge plans.

RESPONSES: "Do not maintain legal or financial records."

"Staff - recommends termination - implements discharge plans - (need qualification about supervision or direction)."

"It is not the policy at this time of the OTR to confer with patients or relatives concerning future treatment plans as the psychiatrist does all pre-discharge planning."

4: Part IV Orients and trains assigned staff, students, volunteers and conference or workshop groups by guiding tours of establishment, by discussing client needs or treatment, and by training in specific therapy techniques. Participates in in-service training and continuing education by attending conferences, seminars and training sessions.

RESPONSES: "Could be COTA except for . . . 'and by training in specific therapy techniques'."

4: Part Va. Performs related duties: Verifies purchase orders, estimates time required to deplete supplies, designs and allocates storage space and determines methods of storage in order to maintain equipment, materials and supplies of unit. May compile statistics for research project or for program planning for consultee agency by tabulating data, interviewing clients or others, completing forms to record and convey data to research team or to consultant.

RESPONSES: "The Certified Occupational Therapy Assistant, under the supervision of a higher level therapist, verifies purchase orders, and determines methods of storage in order to maintain equipment, materials and supplies of each respective unit. The designing and allocation of storage space will be determined by the senior and head occupational therapists as administrative decision is required for space allocation."

4: Part Vb. May promote overall establishment program by performing public relation activities such as speaking to community groups about clients' present and future needs.

RESPONSES: "Chief therapist's responsibility."

4: Part Vc. May participate in coordinating and establishing programs, policies and procedures by exchanging views and data in formal and informal conferences. May assist personnel recruitment by informing supervisor of known qualified individuals seeking employment and by interviewing prospective employees as assigned.

RESPONSES: "Staff and COTA except for 'interviewing'."

"Level 4 therapist should not interview prospective employees. This should be done by Level 5 OT."

Job Description Introduction

Assists occupational therapy staff in treating and training clients with psychosocial or physical dysfunction by implementing programs designed to habilitate or rehabilitate clients in hospital, or other setting:

Level 3 Part I

Confers with occupational therapist or staff specialist to arrange details of daily work schedule, following professional instructions and treatment plan. Escorts client to and from treatment or training area by instructing and aiding client into wheelchair, assisting client into wheelchair, assisting client in pushing wheelchair and walking with or assisting client to area. Aids client by supporting or lifting and positioning into and out of bed, wheelchair, stand-in-table. Guides client through workshop by touring and explaining kind, location and use of equipment while adapting explanation and method of tour to client's capabilities. Organizes clients into groups and distributes arts and crafts material and supplies. Assists client during play or therapeutic activity by explaining activity to client, observing performance, praising and encouraging appropriate responses and changing activity according to attention span of client. Aids client by leading such group activities as card games, music, gardening, singing and such special events as parties and picnics. Observes client for signs of fatigue and distress, and adjusts activities appropriately. Exchanges information concerning client with other staff by observing and reporting his behavior and by attending meetings in which client's treatment is discussed.

RESPONSES:

"Could not be used in a rehabilitation setting. This description is for a person in a nursing home."

"I find this confusing. It says Occupational Therapy Job Description but reads like an OTA Job Sheet in parts. Maybe I'm misinterpreting."

"Except for the following three sentences, the remaining paragraph describes the role of the Occupational Therapy Aide, as it does not require a high-level decision-making process. "Guides client through workshop . . . Observes client for signs of fatigue and distress . . . Exchanges information concerning client . . .'."

3: Part II Reports attendance by tabulating number of clients, names and times attended, and by posting data according to established procedures. Completes accident or incident reports by following prescribed procedure.

RESPONSES: None

3: Part III Fabricates, modifies or adapts slings, splints and self-help devices to assist client in obtaining optimal physical independence by forming, cutting and sewing materials and attaching fasteners according to directions. Informs supervisor of discomfort and poor fit of splint or device by observing and reporting white or red pressure spots on client's extremities.

RESPONSES: "The Occupational Therapy Aide assists the technical or professional staff members by forming, cutting and sewing materials and attaching fasteners according to directions."

"Splint fabrication should not be performed unless therapist is qualified to do so."

3: Part IV Maintains occupational therapy work areas by cleaning, transporting, storing and inspecting materials, equipment and supplies.

RESPONSES: "This sentence describes the responsibilities of the Occupational Therapy Aide. The Certified Occupational Therapy Assistant is trained and educated for higher-level responsibility."

3: Part V Performs related duties: Receives continuing education and training by participating in programs to up-grade job knowledge and to aid in keeping abreast of developments in field. May entertain clients by securing films and operating projector or assisting volunteer entertainers.

RESPONSES: "This paragraph describes the responsibilities of the Occupational Therapy Aide."

QUESTION #3: "WHAT WOULD BE THE MOST APPROPRIATE TITLE FOR EACH LEVEL?"

NUMBER OF RESPONSES:		TITLE
Level 6	1	Chief
	5	Director of Occupational Therapy
	3	Educational and Research Coordinator
	7	Occupational Therapy Research and Program Developer

NUMBER OF RESPONSES:		TITLE
Level 6 (Cont'd.)	3	Supervisor of Research Programs and In-Service Training
	3	Occupational Therapy Consultant and Research Specialist
Level 5	3	Assistant Director of Occupational Therapy
	3	Chief Occupational Therapist
	1	Chief and Staff OT
	2	Senior Staff Therapist
	15	Occupational Therapy Program Director or Supervisor
	1	Clinical Supervisor
Level 4	19	Staff Occupational Therapist, Registered
	4	Certified Occupational Therapy Assistant
	2	Assistant Director
	1	Unit Supervisor
Level 3	15	Certified Occupational Therapy Assistant
	5	Aide and Certified Occupational Therapy Assistant
	4	Occupational Therapy Aide
	1	Divisional Therapist
	1	Rehabilitation Aide

The Planning Advisory Committee met with staff members to determine titles for each job description. The committee reviewed (1) responses to this questionnaire, (2) the primary function of each job description, and (3) guidelines set by the Department of Labor, Division of Occupational Analysis. Titles which were agreed upon are:

Level 6 - Program Development	(Occupational Therapy Consultant)
Level 5 - Program Supervisor	(Occupational Therapist)
Level 4 - Program Implementation	(Occupational Therapy Technician)
Level 3 - Program Support	(Occupational Therapy Aide)

QUESTION #4: "WOULD A PERSON WITH COMPETENCIES NECESSARY TO PERFORM THE ABOVE ACTIVITIES BE EMPLOYED IN THE FACILITY WITH WHICH YOU ARE ASSOCIATED?"

RESPONSES:

Job Description	Yes	No	No Opinion
Level 6	34%	55%	11%
Level 5	83%	14%	3%
Level 4	97%	0	3%
Level 3	94%	3%	3%

This last question assessed the employability of individuals competent in the performance of duties at the various levels. The table above presents the results by percentage of response. The results indicate that individuals competent in Levels 5, 4, & 3 are highly employable. Only one-third of Occupational Therapy departments surveyed employ a person competent at Level 6.

Respondents indicate that their inability to employ persons at the various levels related to specific personnel needs relating to the client population which they were serving.

APPENDIX 10

SURVEY RESULTS
QUESTIONNAIRE TO RELATED HEALTH PROFESSIONS

SURVEY RESULTS
QUESTIONNAIRE TO RELATED HEALTH PROFESSIONS

Occupational Therapy job descriptions developed by the research project "The Development of Occupational Therapy Job Descriptions and Curricula through Task Analysis", funded by HEW, PHS to The School of Allied Medical Professions, The Ohio State University, were sent to twenty-five professional organizations which are related to Occupational Therapy. The purpose of the survey was to determine which of the activities identified in Occupational Therapy are important to clients and are being performed by other health care professions. The following evaluation analyzes twelve responses received from various professional organizations.

Each of the twelve respondents rated each duty under a specific level. Under Level 6, for example there were five duties for the twelve respondents to rate, or a total of sixty possible responses. The table below presents the percentages of responses for the duties at each level.

	Level 6	Level 5	Level 4	Level 3
A. We are prepared to do this:				
More appropriately than OT	2%	4%	1%	2%
Also	13%	15%	15%	20%
In most aspects	7%	5%	5%	8%
In some aspects	36%	34%	37%	24%
Not at all	42%	42%	42%	46%
B. This activity should be:				
A team responsibility	18%	22%	26%	23%
Closely coordinated with us	20%	18%	12%	10%
Brought to our attention	22%	8%	10%	6%
Included in treatment record	2%	10%	12%	11%
An independent function of OT	38%	42%	40%	50%
C. Importance to client/patient:				
Essential to all clients	53%	54%	55%	49%
Essential to specific clients	15%	19%	25%	37%
Desirable but not essential	5%	6%	5%	3%
Useful in limited cases	0	1%	2%	1%
Of no importance	0	0	0	0
No basis for judgment	27%	20%	14%	11%

Note that the respondents indicated their profession was not being prepared to perform over 40% of the duties at each level, and only prepared to perform "some aspects" of about another third of the duties. Other professions were being prepared to perform a very small number of duties (1% to 4%) more appropriately than OT, but they felt they were also prepared to perform about 15% of the duties at each level.

The responses to question B. indicate that most duties are a team responsibility which should be coordinated with other health care personnel, or by an independent function of OT. About the same percentage of duties that were an "independent function of OT" were also "not at all" under question A. (This attests somewhat to the reliability of responses.)

The majority of duties at each level were essential to all or specific clients. None of the duties at any level were "of no importance", and only a small percentage were "useful in limited cases". The table more vividly indicates the importance of these duties if the "no basis for judgment" responses are eliminated.

Overall it would seem that these other professions view Occupational Therapy as an important part of client care. While they are not prepared to do nearly half of the Occupational Therapy activities, there is a sizeable area of overlap in worker activity and professional preparation among Occupational Therapy and these other professions. A high degree of coordination between Occupational Therapy and other health services is needed, particularly in client-care activities. While a very large majority of responses indicated that Occupational Therapy offers necessary and unique services to the client, a significant percentage indicated "no basis for judgment", which may indicate a lack of knowledge about Occupational Therapy.

APPENDIX II

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BIBLIOGRAPHY

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APPENDIX 12

SAMPLE MODULE
AND
SUGGESTIONS FOR COMBINING MODULES

SAMPLE MODULE AND SUGGESTIONS FOR COMBINING MODULES

Level of Job Preparation — PREPARATION FOR OCCUPATIONAL THERAPY AIDE

Module Type — INFORMATION-APPLICATION MODULE

Module Title — *Module Definition*

Observation Techniques: Methods of seeing and perceiving physical and psychosocial behaviors.

Overall Performance Objective: 1) To identify the differences between structured and informal observation and 2) to develop an acceptable skill in recognizing behaviors and physical conditions that are important in an occupational therapy setting.

Related Activities in Occupational Therapy: To oversee client activity, assist client during specified activity, report what is seen to supervisor or staff.

Suggested Objectives:	Examples:
The Learner Should: 1. Identify structured and informal observation.	
2. Classify observational methods in terms of structured or informal observation.	Structured: using behavior check lists or ADL forms, etc. Informal: watching client performance, listening to client, etc.

Suggested Teaching Methods. (See Appendix A)

4. Student Independent

Suggested Evaluation: (See Appendix B)

1. True - False
3. Matching

Suggested Instructional Media: (See Appendix C)

F #25

SUGGESTIONS FOR CLUSTERING AND SEQUENCING
THE OCCUPATIONAL THERAPY CONSULTANT MODULES

	Clinical Application					Information Application								Basic Information									
	23. Research in O.T.	22. Cont. Ed. Prog.	21. Applied Prog. Dev.	20. Prog. Plng. for Cons.	19. Self-Education	18. Applied Research	17. Program Plng.	16. Supervisory Plng.	15. Instruction Plng.	14. Negotiation Skills	13. Group Dynamics	12. Medical Journalism	11. Group Communication	10. Experimental Res.	9. Non-Experimental Res.	8. Intro. to Research	7. Curriculum Devel.	6. Health Care Issues	5. Health Care Facility	4. Communication	3. Mgmnt. in Health Care	2. Health Care Systems	1. Consultant Function
Basic Information																							
1. Consultant Function	R	R	R	R/C	C	R	R/C	R/C	R	R/S	R/S	R	R	I	I	I	R	R	R/C	R/C	R/C	R/C	
2. Health Care Systems	R	R	R	R	C	R	R	R	R	R	I	R	R	I	I	R	I	R/C	R	R/C	R/C		
3. Mgmnt. in Health Care	R	R	R	R	C	R	R/C	R/C	I	R/C	R	I	R	I	I	I	I	R	R	R/S			
4. Communication	R	I	R	R	C	R	R	R	I	I	R	R/C	R/C	I	I	I	I	R	R/S				
5. Health Care Facility	I	R	R	R	C	I	R/C	I	I	I	I	I	I	I	I	I	I	R/S					
6. Health Care Issues	R	C	R	R	C	R	R	I	I	R	R	R/C	R/C	I	I	I	I						
7. Curriculum Devel.	I	R	R	R	C	I	R	R	C	I	R	I	R	I	R	I							
8. Intro. to Research	R/C	R	R	R	C	R/C	R	I	R	I	I	R/S	I	R/C	R/C								
9. Non-Experimental Res.	R/C	R	R	R	C	R/C	R	I	R	I	I	R/S	I	C									
10. Experimental Res.	R/C	R	R	R	C	R/C	I	I	R	I	I	R/S	I										
Information Application																							
11. Group Communication	I	R	R	R	C	I	R	R	R	I	R	R											
12. Medical Journalism	R	R	R	R	C	R/S	R	I	I	I	I												
13. Group Dynamics	I	R	R	R	C	I	R	R	R	R/C													
14. Negotiation Skills	I	R	R	R	C	I	R	R/C	R														
15. Instruction Plng.	R	R C	R	R	C	I	R/C	R/S															
16. Supervisory Plng.	R	R	R	R	C	R	R/S																
17. Program Plng.	R/C	R/C	R/C	R/C	C	R/C																	
18. Applied Research	C	R/C	R/C	R/C	C																		
Clinical Application																							
19. Self-Education	C	C	C	C																			
20. Prog. Plng. for Cons.	R	R/C	R/C																				
21. Applied Prog. Dev.	R/C	R/C																					
22. Cont. Ed. Prog.	R																						
23. Research in O.T.																							

LEGEND

I = independent of
R = related to
C = clustered with
S = simultaneous with
/ = or

APPENDIX 13

DEVELOPING SELECTION SPECIFICATIONS FOR OCCUPATIONAL THERAPY

DEVELOPING SELECTION SPECIFICATIONS FOR OCCUPATIONAL THERAPY

INTRODUCTION

For many decades educators have been perplexed by the problems of selection criteria and selection procedures. Fishman and Pasanella studied 580 predictive studies which were conducted between 1948 and 1958.[1] The vast majority of these studies related high school grades to college freshman grade point average. The most obvious deficiency in these studies was their failure to identify the necessary ingredients for successful on-the-job performance. This is frequently referred to as the criterion problem in research studies. Rather than develop a reliable and valid measure of successful job performance, researchers have been content to validate predictors against any available measure such as grades or standardized achievement tests.

In 1943 Crider summed up the problems in a nursing setting as follows:

> We could eliminate almost all losses except those due to marriage and illness. All that is necessary is minimum critical scores in intelligence, arithmetic and reading, and refuse to take all those who give evidence of personality problems. This is one-sided where the nursing school merely assures its own success and neglects a large number who could have succeeded.[2]

In the discussions of twenty years of research in medical education, Taylor concluded that "little or no relationship has been found between scores of performance in medical education and later criterion scores of physician performance."[3]

A study to determine the predictors of successful clinical affiliation of Occupational Therapy students was conducted by Amy Lind. The criteria in this study were students' clinical affiliation grades, and predictors were generated by the Allport-Vernan-Lindzey Study of Values, the Edwards Personal Preference Schedule, and the Strong Vocational Interest Blank. Although the multiple regression equations were statistically significant, she concluded that: "As the correlations were low they could be of limited value in predicting performance in the clinical experience of students." A primary recommendation of this study was that "Definition of the role and function of Occupational Therapy in the treatment and rehabilitation program needs to be more clearly defined."[4]

A logical question in response to the above considerations is, "How do we resolve these issues in view of the shortage of trained Occupational Therapy personnel?".[5] Task analysis was a technique proposed to provide the following:

(1) an effective division of worker function and responsibilities within a discipline,
(2) clearly defined criteria for the development of educational programs, and
(3) realistic specifications of qualifications needed by individuals selected for these programs.

Through a Health, Education, and Welfare Grant (PHS #5 D02 AH0096402), "Development of Occupational Therapy Job Descriptions and Curricula through Task Analysis", a team of researchers at The Ohio State University, School of Allied Medical Professions, applied an occupational analysis procedure to Occupational Therapy. The occupational analysis was conducted by teams, each composed of an Occupational Therapist, Registered, and an Occupational Analyst from the Department of Labor. The analyses occurred at fifteen facilities which were recommended by a Planning Advisory Committee and which fulfilled preestablished criteria related to type of treatment, client group, etc.

The teams identified 264 duties and 1458 tasks which occurred in the facilities and were performed by Occupational Therapy personnel. This list was reviewed by sixty-seven people associated with Occupational Therapy education and practice. Based on a significant (.05 one-tailed test) number of the sixty-seven responses, duties were added and deleted. Deletions were basically in the clerical and transportation areas, and additions were in consultation and research. These results maintained 246 of the original duties, and added four duties related to consultation and research, for a total of 250 duties.

With each of the initial 264 duties, a rating was given to the following:

(1) Training Time:
    General Educational Development (GED)
    Specific Vocational Preparation (SVP)
(2) Aptitudes
(3) Interests
(4) Temperaments
(5) Physical Demands
(6) Working Conditions

These ratings are based on Appendix B of the Dictionary of Occupational Titles (DOT).[6] The subject performing each duty was identified as an Occupational Therapist, Registered, Certified Occupational Therapy Assistant, and Occupational Therapy Aide.

INITIAL RESULTS

Table A summarizes the results of the task analysis data for all observed duties in the fifteen Occupational Therapy facilities. The scales for GED and SVP are explicated in the Appendix of the DOT, and all other ratings are based on the following scale: 5 - bottom 10% of the population, 4 - lower third of the population other than lower 10%, 3 - middle third of the population, 2 - upper third of the population other than top 10%, and 1 - top 10% of the population.

TABLE A
ORIGINAL DUTY RATINGS

N=264 Measure	Scale Low - High	Mean	Standard Deviation	Range
GED	1 - 6	4.5	0.9	1-6
SVP	1 - 8	6.0	1.7	1-8
Intelligence (G)	5 - 1	2.1	0.7	1-4
Verbal (V)	5 - 1	2.2	0.7	1-4
Numerical (N)	5 - 1	3.3	0.7	2-5
Spatial (S)	5 - 1	3.6	0.6	2-5
Form Perception (P)	5 - 1	3.7	0.6	2-5
Clerical Perception (Q)	5 - 1	3.3	0.7	2-5
Motor Coordination (K)	5 - 1	3.7	0.7	2-5
Finger Dexterity (F)	5 - 1	3.6	0.7	2-5
Manual Dexterity (M)	5 - 1	3.6	0.7	2-5
Eye-Hand-Foot Coord. (E)	5 - 1	4.6	0.5	3-5
Color Discrimination (C)	5 - 1	4.6	0.6	3-5

The mean GED and SVP levels appeared relatively high. Among the aptitudes, the mean ratings for Intelligence and Verbal were relatively high, while those for Eye-Hand-Foot Coordination and Color Discrimination tended to be low.

Intercorrelations among these variables presented two interesting patterns. The intercorrelations among GED, SVP, G, and V tended to be high (.665 to .887) as were the ones among S, P, K, F, and M (.408 to .883). These intercorrelations seemed to indicate that the occupational analysis identified a cognitive-educational dimension depicted by the first group of variables, and psychomotor dimension in the second set of variables.

The DOT provides five pairs of work activities or experiences, and the selection of one member of a pair implies the rejection of the other member. However, members of more than one pair can be selected for each duty. The percentage of the 264 duties which related to each of these experiences is presented in Table B.

The interests indicate that the duties were seen by the analysts as heavily related with people and their "prestige and presumed good". Notice that the interest which was seen in the largest number of duties (61%) indicates a "preference for activities concerned with people and the communication of ideas."

TABLE B
INTERESTS

10.2%	Situations involving a preference for activities dealing with things and objects.	-vs-	61.0%	Situations involving a preference for activities concerned with people and the communications of ideas.
31.1%	Situations involving a preference for activities involving business contact with people.	-vs-	26.5%	Situations involving a preference for activities of a scientific and technical nature.
12.5%	Situations involving a preference for activities of a routine, concrete, organized nature.	-vs-	11.0%	Situations involving a preference of an abstract and creative nature.
57.6%	Situations involving a preference for working for people for their presumed good, as in the social welfare sense, or for dealing with people and language in social situations.	-vs-	2.7%	Situations involving a preference for activities that are nonsocial in nature, and are carried on in relation to processes, machines, and techniques.
19.3%	Situations involving a preference for activities resulting in prestige or the esteem of others.	-vs-	2.3%	Situations involving a preference for activities resulting in tangible, productive satisfaction.

The temperaments related to the 264 duties are listed below with the percentage of duties in which each temperament was apparent. Temperaments listed in the DOT are abstracted from "different types of occupational situations to which workers must adjust."

TABLE C
TEMPERAMENTS

37.1%	Situations involving a variety of duties often characterized by frequent change.
7.2%	Situations involving repetitive or short cycle operations carried out according to set procedures or sequences.
6.4%	Situations involving doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.
54.2%	Situations involving the direction, control, and planning of an entire activity or the activities of others.
70.1%	Situations involving the necessity of dealing with people in actual job duties beyond giving and receiving instructions.
1.0%	Situations involving working alone and apart in physical isolation from others, although the activity may be integrated with that of others.
22.7%	Situations involving influencing people in their opinions, attitudes, and judgments about ideas or things.
1.5%	Situations involving performing adequately under stress when confronted with the critical or unexpected, or when taking risks.
55.7%	Situations involving the evaluation (arriving at generalizations, judgments, or decisions) of information against sensory or judgmental criteria.
25.0%	Situations involving the evaluation (arriving at generalizations, judgments, or decisions) of information against measureable or verifiable criteria.
1.9%	Situations involving the interpretation of feelings, ideas, or facts in terms of personal viewpoint.
5.7%	Situations involving the precise attainment of set limits, tolerances, or standards.

Surveying the temperaments which were seen by the analysts in more than a third of the duties seemed to indicate that duties performed by Occupation Therapy personnel were characterized by the following:

(1) frequent change,
(2) direction, control and planning of activities,
(3) involvement with people in actual job duties, and
(4) evaluation of information.

Although the above may be frequently encountered in Occupational Therapy, many of the other temperaments were also represented (e.g., 5% indicates 13 of the 264 duties).

In terms of physical demands, 92 percent of the duties were viewed as being sedentary or light, six percent as medium, and only two percent as heavy or very heavy.

Virtually all of the activities in Occupational Therapy were seen as being performed inside; only one and one-half percent of the duties involved working both inside and outside.

Each analysis team listed the tasks accompanying each duty and assigned worker function ratings to each task based on the degree to which it required the worker to function in relation to Data, People, and Things. A total of 1458 tasks were reported. The mean, standard deviation, and range for each worker function are given in Table D.

TABLE D
DATA, PEOPLE, THINGS

N=1458 Worker Function	Scale Low - High	Mean	Deviation	Range
Data	8 - 0	2.5	1.5	0-8
People	8 - 0	5.1	2.7	0-8
Things	8 - 0	6.6	1.5	0-8

The scales utilized for the above ratings are hierarchical, and the means seemed to indicate the tasks had a higher involvement with data than they did with things and people. However, a correlation revealed a low, but significant (.05 level) relationship between data and people which may indicate that the data in the 1458 tasks were derived from or directed to client activities.

O.T.R.'s, C.O.T.A.'s, AIDE

The individual performing each of the 264 duties was identified by title. Analysis of the data indicated no significant difference between O.T.R., C.O.T.A., and Aide in the following areas (for all practical purposes, all groups follow the pattern of the initial results): Interests, Temperaments, Physical Demands, and Working Conditions.

Significant differences were seen in the areas of GED, SVP, and Aptitudes. A summary of the results for these areas is presented below for each classification. Table E summarizes the results of the 264 duties substantiated by sixty-seven Occupational Therapy practitioners and educators.

TABLE E
APTITUDES BY CLASSIFICATION

	Scale low-high	OTR (N=163) mean/s.d.	COTA (N=62) mean/s.d.	AIDE (N=21) mean/s.d.
1. GED	1 - 6	4.6/0.8	3.8/0.8	3.0/0.6
2. SVP	1 - 8	6.4/1.4	4.3/1.6	3.0/1.1
3. Intelligence	5 - 1	2.0/0.6	2.9/0.6	3.3/0.5
4. Verbal	5 - 1	2.1/0.6	3.0/0.8	4.0/0.4
5. Numerical	5 - 1	3.2/0.7	3.8/0.5	4.3/0.5
6. Spatial	5 - 1	3.5/0.6	3.7/0.5	4.0/0.5
7. Form Perception	5 - 1	3.2/0.6	3.7/0.5	3.3/1.1
8. Clerical Perception	5 - 1	3.2/0.7	3.9/0.6	3.5/0.8
9. Motor Coordination	5 - 1	3.7/0.6	3.6/0.5	3.6/0.5
10. Finger Dexterity	5 - 1	3.5/0.7	3.4/0.6	3.7/0.5
11. Manual Dexterity	5 - 1	3.6/0.7	3.3/0.6	3.5/0.5
12. Eye-Hand-Foot Coord.	5 - 1	4.7/0.5	4.3/0.6	4.1/0.4
13. Color Discrimination	5 - 1	4.6/0.6	4.3/0.7	4.7/0.5

Multivariate discriminate analysis of the original data for these three classes derived a generalized Mahalanobis D-squre of 136.5 which, as a Chi-square with 26 degrees of freedom, indicating that these classes were significantly different at the .001 level. Analyses and comparison of the functions for each class indicated that the most variability occurred in the GED, SVP, Verbal, and Numerical ratings.

RESTRUCTURING CONFERENCE

Because the Verbal and Numerical indices are included in the GED scale, and the fact that the individuals attending a conference to restructure the duties into two or more occupational levels felt that they understood GED, it became the primary tool used to reclassify the 250 duties into levels. For this reason, a brief discussion of the General Educational Development Tests (GED) is included in this paper.

GED tests were originally developed and standardized in 1942 and 1943 by the United States Armed Forces Institute under the direction of E. F. Lindquist and Ralph W. Tyler. The original purpose of the battery was to help returning servicemen demonstrate the extent to which they had secured the equivalent of a general (non-technical) high school education. The tests, to serve this purpose, were designed especially to measure general educational development which results from informal education.

As a result of this testing program, many servicemen who would otherwise have been educationally or vocationally handicapped without a high school diploma were able to demonstrate competence equivalent to that of a typical high school graduate, and consequently were given diplomas.

Including the original test, thirteen forms have been developed and distributed (the last in 1955), although classified versions have been developed since 1955. The tests have served and continue to serve the following uses:

1. Issuance of secondary school credentials.
2. Determining admission to college.
3. Use within the Armed Forces (qualifying for military assignments, training, and promotion.)
4. Qualification for employment.
5. Self-satisfaction for adults not possessing a high school credential.

Though the tests continue to serve all of these uses, the first two are the most important ones today in terms of frequency. For a more detailed description of these uses, see the Examiner's Manual for the Tests of General Educational Development[7] and a 1944 article by E. F. Lindquist entitled "The Use of Tests in the Accreditation of Military Experience and in the Educational Placement of War Veterans."[8]

The conference established four levels based primarily on the GED scale although a cognitive-educational index, and a psychomotor index were also available. The levels and titles suggested are listed below:

Level 3: Program Support (Occupational Therapy Aide)

Level 4: Program Implementation (Occupational Therapy Technician)

Level 5: Program Supervision (Occupational Therapist)

Level 6: Program Development (Occupational Therapy Consultant)

The original duties were classified by the participants of the restructuring conference into the above GED levels. However, duties were identified which contained components or tasks related to two or more of the new levels. Analysis of the data accompanying the duties which appeared in only one level produced the information displayed in Table F.

TABLE F
APTITUDES FOR RESTRUCTURED LEVELS

	Scale low-high	Level 6 (N=4) mean/s.d.	Level 5 (N=79) mean/s.d.	Level 4 (N=12) mean/s.d.	Level 3 (N=18) mean/s.d.
1. GED	1 - 6	5.3/1.0	5.0/0.5	3.8/0.6	3.8/0.7
2. SVP	1 - 8	6.5/2.4	6.9/1.0	5.5/1.6	2.7/0.8
3. Intelligence	5 - 1	1.8/1.0	1.8/0.5	2.3/0.7	3.5/0.5
4. Verbal	5 - 1	1.8/0.5	1.8/0.5	2.4/0.5	3.7/0.5
5. Numerical	5 - 1	3.5/0.6	3.1/0.7	3.5/0.8	3.9/0.5
6. Spatial	5 - 1	3.5/0.6	3.5/0.6	3.5/0.5	4.0/0.5
7. Form Perception	5 - 1	3.5/0.6	3.6/0.5	3.7/0.5	3.9/0.3
8. Clerican Perception	5 - 1	3.3/1.3	3.1/0.6	3.3/0.8	3.8/0.9
9. Motor Coordination	5 - 1	3.5/0.6	3.8/0.5	3.4/0.5	3.7/0.6
10. Finger Dexterity	5 - 1	3.5/0.6	3.7/0.6	3.4/0.5	3.7/0.5
11. Manual Dexterity	5 - 1	3.8/1.0	3.7/0.6	3.4/0.5	3.5/0.5
12. Eye-Hand-Foot Coord.	5 - 1	4.8/0.5	4.8/0.4	4.4/0.7	4.8/0.4
13. Color Discrimination	5 - 1	4.5/0.6	4.8/0.4	4.2/0.8	4.4/0.5

These new levels reflect the same Interests, Temperaments, Environment, and Physical Activities of the original duties. It may be noted that the GED for Levels 6 and 5 differed only by .3, and no difference was evident between Levels 4 and 3. However, the SVP and other aptitude scales showed a great difference between Levels 3 and 4, and seemed to dispel any notion of establishing only two levels. Specific Vocational Preparation seemed to indicate Level 5 required more training time than Level 6. The mean SVP for Level 3 seemed low when compared to the other levels.

RATINGS FOR NEW LEVELS

The four new levels developed by the participants in the restructuring conference were rated by Occupational Analysts. This was necessary because many of the original duties were divided and classified in more than one level. Five analysts rated all duties in each level, and Table G summarizes the results.

TABLE G
NEW APTITUDE RATINGS BY LEVELS

	Scale low-high	Level 6 (N=25) mean/s.d.	Level 5 (N=128) mean/s.d.	Level 4 (N=80) mean/s.d.	Level 3 (N=55) mean/s.d.
1. GED	1 - 6	5.3/0.6	4.9/0.6	3.9/0.5	*2.9/0.7
2. SVP	1 - 8	6.4/1.8	*5.7/1.8	*4.2/1.2	*3.4/1.5
3. Intelligence	5 - 1	1.7/0.5	2.0/0.5	*2.7/0.4	*3.0/0.5
4. Verbal	5 - 1	1.8/0.5	2.0/0.5	2.7/0.4	*3.1/0.6
5. Numerical	5 - 1	*2.4/0.6	3.2/0.8	3.6/0.6	3.8/0.6
6. Spatial	5 - 1	3.5/1.0	3.8/0.8	3.9/0.8	3.8/0.8
7. Form Perception	5 - 1	3.7/1.0	3.9/0.8	4.0/0.7	3.8/0.8
8. Clerical Perception	5 - 1	3.9/0.6	3.3/0.6	3.3/0.7	3.9/0.9
9. Motor Coordination	5 - 1	3.9/0.7	3.8/0.5	3.8/0.5	*3.4/0.5
10. Finger Dexterity	5 - 1	4.1/0.8	4.0/0.7	4.0/0.8	3.6/0.9
11. Manual Dexterity	5 - 1	3.9/0.7	3.7/0.5	3.7/0.6	3.3/0.6
12. Eye-Hand-Foot Coord.	5 - 1	4.6/0.6	4.9/0.3	4.9/0.4	4.6/0.6
13. Color Discrimination	5 - 1	4.6/0.6	4.9/0.3	*4.9/0.3	4.6/0.5

*Significant difference (.05 level) from original averages.

The averages of the analysts' new ratings for GED, SVP, and Aptitudes corresponded closely with the averages of the original duty ratings assigned to each level. On Level 6, the only significant difference occurred in the Numerical area where the analysts raised the requirements. The only significant change in Level 5 was a lowering of the time requirements in Specific Vocational Preparation. Although the analysts lowered all the ratings in Level 4, the only ones which were significant were SVP, Intelligence, and Color Discrimination. The analysts ratings for Level 3 differed from the original ratings in that they showed the following significant changes: 1) lowered the GED, 2) raised the SVP, 3) lowered the Intelligence, 4) lowered the Verbal ability, and 5) raised the Motor Coordination.

The physical demands and environmental conditions were seen by the analysts to be sedentary or light and indoors, respectively. However, the interests and temperaments ratings became more specific by level. Level 6, while maintaining an interest in people, indicated an interest in activities of a scientific, technical, and abstract nature. The data for Level 3 indicated a high interest in situations involving people, and no desire for situations dealing with abstract and technical aspects of Occupational Therapy. The differences between levels, and the trend as one progresses from Level 3 to Level 5 is evident in the following discussion.

SELECTION SPECIFICATIONS FOR EACH LEVEL

The following suggestions are based entirely on a detailed investigation of the information cited previously. In addition to the statistical assumptions that the GED, SVP, and Aptitude scales are interval, these suggestions assume that the individual is being selected for Occupational Therapy related training.

Level 6

The individual should:

1. Have Level 5 GED in language, mathematics, and reasoning development.
2. Be in the top 20% of the population in Intelligence.
3. Be in the top 25% of the population in Verbal ability.
4. Be in the top 50% of the population in Numerical ability.
5. Desire activities involving business contact with people.
6. Desire activities involving work with people for their presumed good and prestige.
7. Desire activities involving scientific, technical, and abstract work.
8. Be capable of adjusting to frequent change.

9. Be capable of adjusting to deal with people beyond giving and receiving instruction.
10. Be able to influence the opinions, attitudes, and judgments of others.
11. Be able to evaluate information against sensory or judgmental criteria.
12. Desire indoor employment.
13. Desire a job with very little physical activity.
14. Be able to devote 1 to 2 years to training.

Level 5

The individual should:

1. Have language development at Level 5 GED.
2. Have mathematics development at Level 4 GED.
3. Have reasoning development at Level 5 GED.
4. Be in the top third of the population in Intelligence.
5. Desire situations dealing with people and working for their presumed good and prestige.
6. Desire situations concerning the communication of ideas to people.
7. Desire situations involving the direction, control, and planning of activities.
8. Desire to work with people beyond giving and receiving instructions.
9. Desire situations involving the evaluation of information against judgmental criteria.
10. Desire indoor employment with very few outside activities.
11. Desire a job with light or sedentary physical activities.
12. Be able to devote 1 to 2 years to training.

Level 4

The individual should:

1. Have a GED level of 4.
2. Be in the top 50% of the population in Intelligence.
3. Be in the top 50% of the population in Verbal ability.
4. Desire to work with people for their presumed good.
5. Desire activities resulting in prestige or the esteem of others.
6. Desire activities involving people and the communication of ideas.
7. Desire to deal with people beyond giving and receiving instruction.
8. Desire to influence people and their opinions, attitudes, or judgments.
9. Desire indoor employment.
10. Desire work with mostly light or sedentary physical activity.
11. Be able to devote 6 months to a year to training.

Level 3

The individual should:

1. Have a GED level of 3.
2. Have a preference for working with people, as in the social welfare sense.
3. Desire situations involving people and the communication of ideas.
4. Desire activities of a routine, concrete, organized nature.
5. Desire activities dealing with things and objects.

6. Be able to adjust to duties characterized by frequent change.

7. Desire to deal with people beyond giving and receiving instruction.

8. Desire activities involving the evaluation of information against judgmental criteria.

9. Desire indoor employment.

10. Desire a job involving light or sedentary physical activities.

11. Be able to devote up to 3 months to training.

SUMMARY

This paper presented the data and its various revisions related to the activities in an Occupational Therapy facility. Based on this data, a restructuring conference established four levels of complexity of an activity in Occupational Therapy. The duties and tasks in each of the four levels were rated again by Occupational Analysts, and from these ratings, baseline selection specifications were developed.

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APPENDIX 14

SURVEY RESULTS
LEVELS OF COMPLEXITY OF LEARNING

SURVEY RESULTS
LEVELS OF COMPLEXITY OF LEARNING

The following four page chart summarizes the complexity of learning for each level of General Educational Development identified through task analysis and job restructuring. Thirty-four areas are divided among the cognitive domain, affective domain (as related to taxonomies developed by Bloom and Krathwohl), and the psychomotor domain (adapted from the Dictionary of Occupational Titles).

The chart is summarized into a 34 x 4 matrix from a 34 x 61 matrix for easier interpretation. Originally level 3 had 11 duties, level 4 had 20 duties, level 5 had 27 duties, and level 6 had 3 duties -- or a total of 61 duties. Therefore, the responses under each level are averages of the original frequencies so it is possible to compare the various levels in each of thirty-four areas of learning.

The results reveal that the lower level 3 requires a stronger emphasis in area 1 (Recall of Specifics) than does any other level. However, the data should not be construed to indicate that level 3 is twice as important as level 4 under area 1.

It is interesting to note that generally the cognitive and affective tables follow the hierarchical pattern intended in the taxonomies. That is, as the areas progress from 1 to 10 under the cognitive domain, the importance also shifts from the lower level 3 to the higher level 6, and this is also true for the affective domain.

COGNITIVE DOMAIN	Weighted Frequency Response			
	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6
1. Recall of specifics	17	9	4	0
2. Recall of ways and means of dealing with specifics	18	12	5	1
3. Recall of theories and patterns of therapeutic principles	8	10	10	11
4. Comprehension of facts	16	19	7	3
5. Interpretation of relationships of facts	6	16	16	8
6. Extension of interpretation beyond given facts	2	6	6	8
7. Abstraction from concrete situations	1	4	5	5
8. Analysis of elements, relationships and organizational principles	2	10	20	37
9. Derivation of a plan, or proposed operations	3	11	22	35
10. Development of judgments from internal evidence or external criteria	3	8	19	35

AFFECTIVE DOMAIN	Weighted Frequency Response			
	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6
11. Awareness of behaviors and events	12	10	9	3
12. Acceptance of client values and behaviors	3	3	3	0
13. Sensitivity to client values and behaviors	11	11	11	3
14. Expression of feelings, emotions and attitudes	1	1	2	0
15. Appreciation of aesthetic beauty	0	0	0	0
16. Compliance in performing tasks	12	5	1	0
17. Willingness to provide service	9	4	4	3
18. Derivation of satisfaction in providing service	9	2	1	0
19. Acceptance of the values of providing service	10	5	3	1
20. Examination and election of values of therapeutic activities	2	6	8	3
21. Commitment to values of therapeutic activities	3	4	5	2
22. Formation of judgments concerning personal responsibilities	5	4	3	1
23. Organization of a value system concerning personal responsibilities and therapeutic principles	3	5	6	7

AFFECTIVE DOMAIN (Continued)	Weighted Frequency Response			
	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6
24. Readiness to revise judgments and change behavior in light of evidence	1	5	7	11
25. Development of ethical code of behavior consistent with principles of therapy	2	3	6	8

PSYCHOMOTOR SKILL DOMAIN	Weighted Frequency Response			
	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6
26. Ability to discriminate quality and kind of sensory information	4	3	1	0
27. Ability to perceive and recognize forms in space and relationships of plane and solid objects	4	1	0	0
28. Ability to perceive pertinent detail in objects, pictorial or graphic material	3	2	1	1
29. Ability to make sensory comparisons and discriminations and sense slight differences in sensory information	2	2	3	1
30. Ability to remember and recognize pertinent details of sensory information	4	3	2	3
31. Ability to perform large muscle activity requiring strength or endurance or both	6	1	0	0
32. Ability to move the extremities coordinately with each other according to sensory stimuli	5	1	1	0
33. Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed	4	1	1	0
34. Ability to move the hands easily and skillfully in placing, turning, pushing, pulling motions	6	2	1	1

APPENDIX 15

CURRICULUM GUIDE EVALUATION FORMS

CURRICULUM GUIDE EVALUATION FORMS

INTRODUCTION EVALUATION

	Strongly Agree	Agree	?	Disagree	Strongly Disagree
NECESSARY	___	___	___	___	___
EFFECTIVE	___	___	___	___	___
COMPLETE	___	___	___	___	___
UNDERSTANDABLE	___	___	___	___	___
UNIQUE	___	___	___	___	___
CONCISE	___	___	___	___	___
WORTHLESS	___	___	___	___	___
ORGANIZED	___	___	___	___	___
USABLE	___	___	___	___	___
EFFICIENT	___	___	___	___	___
CONSISTENT	___	___	___	___	___

COMMENTS: ____

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____

PREPARATION FOR:
( ) AIDE ( ) THERAPIST
( ) TECHNICIAN ( ) CONSULTANT

MODULE EVALUATION

MODULE TITLE: ____________________
____

	UNDERSTANDABLE		NECESSARY		CHANGES NEEDED
	YES	NO	YES	NO	
RELATED ACTIVITIES IN OCCUPATIONAL THERAPY					
SUGGESTED OBJECTIVES (The Learner Should:) 1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Additions needed in the module: ____________________
____

Comments: ____________________
____

OVERALL CURRICULUM GUIDE EVALUATION

1. The overall guide is:

	Strongly Agree	Agree	?	Disagree	Strongly Disagree
EFFECTIVE	____	____	____	____	____
COMPLETE	____	____	____	____	____
UNDERSTANDABLE	____	____	____	____	____
UNIQUE	____	____	____	____	____
CONCISE	____	____	____	____	____
WORTHLESS	____	____	____	____	____
ORGANIZED	____	____	____	____	____
USABLE	____	____	____	____	____
EFFICIENT	____	____	____	____	____
CONSISTENT	____	____	____	____	____

2. What additional modules are needed?

____

____

____

3. What changes are needed in the module sequence?

____

____

____

4. What improvements might be made in the module format?

____

____

____

APPENDIX EVALUATION

SECTION 1 - INSTRUCTION STRATEGIES AND METHODS

	Strongly Agree	Agree	?	Disagree	Strongly Disagree
NECESSARY	____	____	____	____	____
EFFECTIVE	____	____	____	____	____
COMPLETE	____	____	____	____	____
UNDERSTANDABLE	____	____	____	____	____
UNIQUE	____	____	____	____	____
CONCISE	____	____	____	____	____
WORTHLESS	____	____	____	____	____
ORGANIZED	____	____	____	____	____
USABLE	____	____	____	____	____
EFFICIENT	____	____	____	____	____
CONSISTENT	____	____	____	____	____

COMMENTS: ____

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APPENDIX EVALUATION

SECTION 2 - MEDIA

	Strongly Agree	Agree	?	Disagree	Strongly Disagree
NECESSARY	_____	_____	_____	_____	_____
EFFECTIVE	_____	_____	_____	_____	_____
COMPLETE	_____	_____	_____	_____	_____
UNDERSTANDABLE	_____	_____	_____	_____	_____
UNIQUE	_____	_____	_____	_____	_____
CONCISE	_____	_____	_____	_____	_____
WORTHLESS	_____	_____	_____	_____	_____
ORGANIZED	_____	_____	_____	_____	_____
USABLE	_____	_____	_____	_____	_____
EFFICIENT	_____	_____	_____	_____	_____
CONSISTENT	_____	_____	_____	_____	_____

COMMENTS: ____

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APPENDIX EVALUATION

SECTION 3 - EVALUATION

	Strongly Agree	Agree	?	Disagree	Strongly Disagree
NECESSARY	____	____	____	____	____
EFFECTIVE	____	____	____	____	____
COMPLETE	____	____	____	____	____
UNDERSTANDABLE	____	____	____	____	____
UNIQUE	____	____	____	____	____
CONCISE	____	____	____	____	____
WORTHLESS	____	____	____	____	____
ORGANIZED	____	____	____	____	____
USABLE	____	____	____	____	____
EFFICIENT	____	____	____	____	____
CONSISTENT	____	____	____	____	____

COMMENTS: ____

____

____

____

____

APPENDIX EVALUATION

SECTION 4 - SELECTION SPECIFICATIONS

	Strongly Agree	Agree	?	Disagree	Strongly Disagree
NECESSARY	___	___	___	___	___
EFFECTIVE	___	___	___	___	___
COMPLETE	___	___	___	___	___
UNDERSTANDABLE	___	___	___	___	___
UNIQUE	___	___	___	___	___
CONCISE	___	___	___	___	___
WORTHLESS	___	___	___	___	___
ORGANIZED	___	___	___	___	___
USABLE	___	___	___	___	___
EFFICIENT	___	___	___	___	___
CONSISTENT	___	___	___	___	___

COMMENTS: ______________________________

APPENDIX 16

OCCUPATIONAL THERAPY CURRICULUM EVALUATION

OCCUPATIONAL THERAPY CURRICULUM EVALUATION

The curriclum guides have been evaluated by experts in Occupational Therapy. They reviewed the guides using instruments in the preceding section (Appendix 15). These evaluations dealt primarily with content and organization. A more encompassing evaluation must occur when the guides are implemented since, in the final analysis, the value of these guides can only be determined through an evaluation of the students who have been exposed to the curricula.

A summary of the results for each of the levels indicated that the evaluators felt the guides were extremely useful. Eight of the eleven adjectives were rated "strongly agree" or "agree" over 92% of the time by the evaluators. A similar percentage disagreed with the suggestion that the guides were "worthless". The majority of responses indicated that the respondents were "undecided" as to whether or not the guides were unique. Although the majority of responses agreed that the guides were "concise", extensive written suggestions were provided by the evaluators.

Major suggestions posed by the evaluators are listed for the overall guide and for each specific level.* Although the vast majority of comments were positive, those listed were selected to assist the future implementor of this guide.

Overall Guide

1. Use recognizable titles for each level.
2. Indicate how the guide relates to specialty roles in Occupational Therapy.
3. Increase the scope of the introduction so as to include much of the appendix material.
4. Design each module so it stands alone and does not require frequent references to other material.
5. Specify the difference between "Goal" and "Purpose" as they are used in each module.
6. Indicate how the guide should be used.
7. Provide information regarding the relationship which exists between modules in different levels.

---

*Many of these suggestions have been incorporated; hence, relating them to the present guide may be difficult.

Level 6

1. Make the statistics modules more specific.
2. Indicate whether it is necessary to complete level five before this one.
3. Suggest need for more in-depth training in sociology and psychology.

Level 5

1. Delete the module on medical terminology.
2. Don't provide too many examples as this tends to make the modules complete.
3. Add modules on evaluation, educational function, and teaching strategies.
4. Organize the modules by subject matter.
5. Provide additional examples and content for modules 12-16.

Level 4

1. Increase suggested training time. Nine months is not sufficient.
2. Revise the normal and abnormal psychology modules. They are incomplete and inaccurate.
3. Use measurable verbs.
4. Sequence modules so students learn normal before abnormal.
5. Complete the clinical application modules.
6. Add modules on emergency care, counseling, and legal responsibilities.

Level 3

1. Expand and clarify the modules on problem solving.
2. Make the basic information modules less scholarly.
3. Make the modules teachable and work related.
4. Do not make these modules too detailed as they vary between facilities.

APPENDIX 17

MINUTES - PLANNING ADVISORY COMMITTEE MEETING

MINUTES - PLANNING ADVISORY COMMITTEE MEETING

May 3 and 4, 1972

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The Planning Advisory Committee meeting opened with a review of the project's curriculum development procedures. Participants were given an opportunity to individually review the Curriculum Guides. The purpose for individual review was to identify what parts of the Curriculum Guides were unclear, or incomplete. The Committee made the following recommendations:

Overall Format

The general layout of the guides was acceptable. Minor revisions were suggested.

Introduction

The introduction might be improved by expanding the instructions for using the guides and by defining General Educational Development as used in this project.

Titles

The Committee recommended use of the descriptive title as primary reference and the functional title as a secondary reference. The form to be used throughout the guides is: Occupational Therapy Aide (Program Support).

Basic Information, Information-Application and Clinical Application Modules

The relationship of modules between levels should be discussed.

All modules should reflect the vocabulary of potential trainees at each level.

There should be a clear explanation of the rationale for sequencing of modules.

Appendix I - Interactive Strategies

This appendix should be considered a means to educate the user to understand various ways of instructing. Terms in the appendix should be defined and basic "how to" references might be given.

This appendix should also comment upon how methods of instruction relate to the level of the learner, learning setting, and type of material presented. The order of methods should be listed so as to emphasize that methods other than lecture often are more effective.

Appendix II - Instructional Media

This appendix was considered valuable but needs work. Suggestions for detailed changes were made.

Appendix III - Evaluation

This appendix should also be considered a tool for educating a teacher. Terms should be defined. Other suggestions for specific changes were noted.

Appendix IV - Selection Specifications

The Committee discussed whether or not this appendix was appropriate information to be included in the guide. It is research oriented and relates to task analysis procedure rather than to curriculum development.

It was agreed to keep this section in the appendix since it would give background information to those who were interested and defines the basis for the selection specifications.

Affective Objectives

The Committee felt that affective objectives should be included. The chart below summarizes group discussion:

Format	Discussion
1. Categorize objectives in each module as cognitive, psychomotor, or affective.	1. Difficult to make distinction in some cases.
2. Add affective objectives to each module, leaving cognitive and psychomotor objectives "as is".	2. May be repetitious since affective values are already present in some objectives.
3. Add a section of affective objectives to each level of preparation. Signify importance of affect to actual on-the-job performance.	3. Put affective objectives for each level in a section before the Clinical Application Modules. Write an introduction to this section indicating: a. difficulty of teaching affect, b. difficulty of measuring affect, c. importance of affect. Key affective objectives to Clinical Application Modules where possible.

Use of the Curriculum Guides

A discussion was held concerning the mechanical dissemination of the material so that parts of the guide could be available to professionals for various purposes. The following were suggested as potential ways the guides might be used:

1. Guidelines for developing new programs of Occupational Therapy education.
2. Guidelines for upgrading or evaluating existing Occupational Therapy curriculum.
3. Guidelines for continuing education.

4. Guidelines for peer review.

5. Guidelines for developing core curriculum in allied health which incorporate Occupational Therapy education.

6. Guidelines for designing career mobility in Occupational Therapy. (Overlap in content between levels indicates potential for proficiency and performance examinations.)

It was difficult to separate discussion of the use of the guides from implementation procedures, since successful use depends upon good implementation. Dr. Dohner and Dr. Williams outlines steps for overall implementation:

1. Identify Target Population - either persons starting new academic or on-the-job training programs or those upgrading present programs.

2. Solicit Strong Advocacy

   a. Compare content in the guides with present educational standards. A.O.T.A. may send copies of the guides to institutions requesting material for setting up new curriculum. A comparison of content to standards would facilitate A.O.T.A.'s possible use of the guides.

   b. Disseminate material to educators and explain broad uses of the guides. If educators use the guides, advocacy will be established.

   c. State in the guides that any person or institution using the guides should seek approval for new programs from A.O.T.A.

3. Hold Workshops (or other means of person-to-person contact)

   a. Disseminate material by level.

   b. Develop sample modules in entirety, using related materials.

   There was general agreement that workshops would be the best form of person-to-person contact for disseminating material in the guides. The budget, however, cannot pay for large scale workshops.

4. Follow Through and Evaluate Actual Implementation

The Committee suggested designing a product evaluation instrument for each level and setting up a "trouble shooting consultation service" to assist guide users. Unfortunately neither can be included in the present project.

The Planning Advisory Committee discussed indications for career mobility in the guides. It was decided that the overlaps in content among modules and levels was desirable, and the overlaps should be noted in the introduction to the use of the guides. Charts showing how content from one level feeds into the next higher level (or is the same content as in the higher level) would also be helpful. These "curriculum maps" would show on paper the potential of academic progression. Module "clusters" should also be shown and comparisons within and between them made. Overlapping of content shows potential for proficiency or equivalency examination or credit for prior experience, but cannot be considered a career mobility design.

The potential for a "backwards" curriculum - that is, one which would introduce an application skill and provide resources for learners to obtain the basic information needed to perform that particular application - was discussed.

Potential "core" modules (across both intra-professional lines and inter-professional lines) might be listed as suggestions.

The committee also made suggestions for improving procedures if a similar project is done in another area of allied health. These suggestions are noted below:

Procedure:	Comments:
Data Collection	A larger sample would yield more acceptable data.
Task Analysis	If used, should also consider using task inventory. Further refinement of Department of Labor's observation and measurement of interpersonal relationships are required. It may be desirable that quality and quantity are not indicated in the task analysis data. These must be established by individual educators.

Procedure:	Comments:
Professional Involvement	In a research project where final results are not known, professional involvement during the initial stages of the project may not be advisable. In a developmental project, professional involvement from initiation of the project may be helpful.

Further studies of this type should have built-in implementation and orientation procedures (such as: workshops, conferences, implementation planning sessions, etc.).